

## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
20 December 2001 (20.12.2001)

PCT

(10) International Publication Number  
WO 01/97131 A2

- (51) International Patent Classification<sup>7</sup>: G06F 17/60
- (21) International Application Number: PCT/US00/16316
- (22) International Filing Date: 7 July 2000 (07.07.2000)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
09/593,814 15 June 2000 (15.06.2000) US
- (71) Applicant: CATALINA MARKETING INTERNATIONAL, INC. [US/US]; 11300 9th Street North, St. Petersburg, FL 33716 (US).
- (72) Inventor: KLINGLE, David; 540 Carillon Parkway, St. Petersburg, FL 33716 (US).
- (74) Agents: NEIFELD, Richard, A. et al.; Oblon, Spivak, McClelland, Maier & Neustadt, P.C., Crystal Square Five, Fourth Floor, 1755 Jefferson Davis Highway, Arlington, VA 22202 (US).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).
- Published:**  
— with declaration under Article 17(2)(a); without abstract; title not checked by the International Searching Authority
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*



WO 01/97131 A2

(54) Title: METHOD AND SYSTEM FOR STANDARDIZING DELIVERY, ACCEPTANCE, AND REDEMPTION OF PROMOTIONS WITH VARIOUS ELECTRONIC DEVICES

(57) Abstract:

**Method and System for Standardizing Delivery,  
Acceptance, and Redemption of Promotions with Various Electronic Devices**

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates generally to the use of a computer system, and more specifically to the use of a computer system to provide a standardized platform for delivering, accepting, and redeeming promotions. As used herein, the word "promotion" means any offer, incentive, advertisement, commercial, coupon, and/or communication for promoting one or more goods and/or services.

Discussion of the Background

The popularity of consumer electronics has become so widespread that is not unusual for a single consumer to own or use two or more electronic devices, such as a mobile phone, personal data assistant (PDA), or a personal computer (PC), for example. The explosive growth of consumer electronics has been accompanied by advances in communications, permitting consumers to send and receive information quickly and efficiently through various electronic devices. The use of communications networks to deliver advertisements, incentives, and other promotions to consumer electronic devices is gaining popularity as marketers develop new ways of disseminating promotions to consumers.

An exemplary method and system for delivering promotions to electronic devices is described in U.S. Patent No. 6,055,573, which is incorporated herein by reference. Methods and systems for providing promotions to consumers through a computer network are described in U.S. Patent Nos. 5,970,469, and 6,014,634, both of which are incorporated herein by reference. These and other systems for delivering promotions use Internet protocols and database technologies. The design and implementation of various methods of database networking and Internet communications are described in Liu *et al.*, "Managing Internet Information Services," O'Reilly & Associates, Inc., 1994; Comer, "Internet Working with TCP/IP Volume I: Principles, Protocols, and Architecture," 2<sup>nd</sup> ed., Prentice-Hall, Inc., 1991; Comer and Stevens, "Internet Working with TCP/IP Volume II: Design, Implementation, and Internals," Prentice-Hall, Inc., 1991; Comer and Stevens, "Internet Working with TCP/IP Vol. III: Client-Server Programming and Applications," Prentice-Hall,

Inc., 1993; Khoshafian *et al.*, "A Guide to Developing Client/Server SQL Applications," Morgan Kaufmann Publishers, Inc.; Hamilton *et al.*, "JDBC Database Access with Java, A Tutorial and Annotated Reference," Addison-Wesley Pub. Co., 1997; and Francis *et al.*, "Professional Active Server Pages 2.0," Wrox Press Ltd., 1998; each of which is incorporated by reference herein.

Even though consumer electronic devices are popular and provide a convenient medium through which marketers can deliver promotions, the delivery of promotions to different electronic devices may result in marketers delivering the same promotion to the same consumer repeatedly through the consumer's different electronic devices. This may result in a waste of resources and expenditures for an advertiser, who may desire to send promotions only to the electronic device that the consumer prefers to receive promotions with. Likewise, consumers may become annoyed when they receive the same promotions through various electronic devices, particularly when a consumer prefers to receive promotions with one electronic device yet is still bombarded with promotions delivered to other electronic devices of the consumer. Moreover, when promotions are delivered to multiple electronic devices of a consumer, the consumer may have difficulty remembering or keeping track of which electronic device the consumer used to accept a particular promotion. This difficulty is compounded when the electronic devices are also used to redeem incentives and other promotions because the device used to redeem a promotion may differ, depending on the promotion, on the device used to accept the promotion, and on the device to which the promotion was delivered.

#### SUMMARY OF THE INVENTION

Accordingly, one object of the present invention is to provide a novel method, system, and computer program product for effectively and efficiently delivering, accepting, and redeeming electronic promotions.

It is another object of the present invention to provide a novel method, system, and computer program product for consolidating promotion delivery, acceptance, and redemption activities so that they are easily understood and adopted by consumers.

It is yet another object of the present invention to provide a novel method, system, and computer program product for a standardized platform through which retailers, marketers, advertisers, and others deliver promotions to consumer electronic devices.

It is still a further object of the present invention to provide a novel method, system, and computer program product for simplifying registration of multiple electronic devices used by a single consumer or household.

These and other objects are achieved by providing a novel method, system, and computer program product for registering consumer electronic devices. The method, on which the system and computer program product are based, includes: receiving from an electronic device a consumer identifier (CID), preferred merchant information, and promotions vehicle information; and associating the CID with the preferred merchant information and the promotions vehicle information. The CID corresponds to a consumer, the preferred merchant information corresponds to the preferred merchant of the consumer, and the promotions vehicle information corresponds to a preferred medium of the consumer for receiving promotions. The CID may be a loyalty card number, cookie, IP address, telephone number, or e-mail address, for example.

According to one aspect of the invention, prompts are sent to the electronic device from a registration server to request the user to input the CID and to select preferred merchants and promotions vehicles. In one embodiment, the registration server is a Web server, and the electronic device runs Web browser software that provides a graphical user interface between the consumer and the electronic device communicating with the registration server.

According to another aspect of the invention, the electronic device or another electronic device provides a promotions vehicle for receiving promotions. Preferably, the promotions vehicle is associated with a promotions vehicle identifier, such as an IP address or telephone number, used to deliver promotions to the promotions vehicle. In one embodiment, information obtained during a registration process (e.g., the promotions vehicle identifier, preferred merchant information, and customer identifier) is delivered to another computer (i.e. a promotions server), which delivers the promotions to the promotions vehicle.

Promotions delivered to the promotions vehicle are preferably associated with one or more preferred merchants selected by the consumer in one or more product categories. For

example, a consumer may select Safeway as his or her preferred merchant in the "groceries" category and select Barnes and Noble as his or her preferred merchant in the "books" category.

According to another aspect of the invention, the consumer registers an incentive vehicle and/or a reward vehicle with the registration server. The incentive vehicle (e.g., a personal data assistant or loyalty card) is used by the consumer to redeem a promotion. The reward vehicle (e.g., a credit card or loyalty card) is used by the system to deliver rewards to a consumer.

Objects and advantages of the present invention are also obtained by providing a novel method, system, and computer program product for delivering promotions. CID information, preferred merchant information, and promotions vehicle information are stored in a memory. The CID information is associated with the preferred merchant information and the promotions vehicle information and corresponds to a CID of a consumer, the preferred merchant information corresponds to a preferred merchant of the consumer, and the promotions vehicle information corresponds to a promotions vehicle identifier of a promotions vehicle selected by the consumer to receive promotions. Promotions are then delivered to the promotions vehicle, using the promotions vehicle identifier. Preferably, the promotions correspond to one or more preferred merchants of the consumer in different product categories. As noted above, the consumer may select preferred promotions, incentive, and/or reward vehicles with which to receive and redeem promotions.

Accordingly, it can be appreciated that the present invention provides many conveniences and advantages for consumers with multiple electronic devices. Consumers may register multiple electronic devices and select a single electronic device for receiving promotions. Likewise, a consumer may select preferred incentive and reward vehicles to add standardization and homogenization to the process of redeeming promotions.

The present invention is also advantageous to marketers and other promoters of goods and services because the present invention provides a standardized platform through which promotions are generated, delivered, and redeemed. Promotions delivered to consumers may be targeted based on their observed shopping histories and based on their preferred merchant selections. Also, promotions are delivered to consumers' preferred promotions vehicles, and thus, are more likely to be received by consumers. Similarly, if incentive vehicles and/or

reward vehicles are selected by consumers on the basis of their preferences, consumers are more likely to participate in promotions due to the added conveniences that the present invention provides to consumers. Further, if promotions are only redeemable at preferred merchants selected by consumers, then manufacturers and retailers are assured that promotions will not cause consumers to switch their loyalty to the detriment of their currently preferred retailers (i.e., merchants).

### BRIEF DESCRIPTION OF THE DRAWINGS

A more complete appreciation of the invention and many of the attendant advantages thereof will be readily obtained as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings, wherein:

Figure 1 is a schematic diagram of a computerized system for delivering, accepting, and redeeming promotions, according to an embodiment of the invention;

Figure 2 is a schematic diagram of a computerized system that may be used in conjunction with the system of Figure 1 for delivering, accepting, and redeeming promotions, according to an embodiment of the invention;

Figure 3 is a block diagram showing how the promotions system of Figures 1 and 2 relates to a retail store, according to an embodiment of the invention;

Figure 4A is an electronic device table for associating a customer identifier (CID), electronic device, electronic device identifier (ID), and a default promotions vehicle indicator, according to an embodiment of the invention;

Figure 4B is a preferred retailer table for associating a preferred retailer with different product categories for each consumer, according to an embodiment of the invention;

Figure 4C is a vehicle table for associating a promotions vehicle, an incentive vehicle, an incentive vehicle ID, a reward vehicle, and a reward vehicle ID with each preferred retailer of a consumer, according to an embodiment of the invention;

Figure 4D is a reward table for associating a promotion ID with a reward trigger for each consumer, according to an embodiment of the invention;

Figure 5A is a flowchart for explaining how a consumer registers one or more electronic devices with the computer system of Figure 1, 2, and/or 3, according to an embodiment of the invention;

Figure 5B is a flowchart for explaining how a consumer selects preferred retailers for different product categories according to an embodiment of the invention;

Figure 5C is a flowchart for explaining how a consumer selects a preferred incentive vehicle and reward vehicle for promotions relating to a preferred retailer, according to an embodiment of the invention;

Figure 6 is a flowchart for explaining how a consumer registers several electronic devices with the system of Figures 1, 2, and/or 3 and select preferred retailers, promotions vehicles, incentive vehicles, and reward vehicles at once, according to an embodiment of the invention;

Figure 7 is a flowchart explaining how promotions are generated and delivered to consumer electronic devices according to an embodiment of the invention;

Figure 8A is a flowchart explaining how consumers redeem electronic promotions according to an embodiment of the invention;

Figure 8B is a flowchart explaining an alternate method by which consumers redeem electronic promotions according to an embodiment of the invention;

Figures 9A and 9B are exemplary electronic promotions; and

Figure 10 is a schematic illustration of a computer system programed to perform one or more of the special purpose functions of the present invention.

#### DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to the drawings, wherein like reference numerals designate identical or corresponding parts throughout the several views, and more particularly to Figure 1 thereof, there is shown a computerized system for delivering, accepting, and redeeming electronic promotions. The exemplary system of Figure 1 includes a registration server 101, a registration database 102, consumer electronic devices (i.e., a web appliance 103, a mobile phone 105, a personal data assistant (PDA) 107, a two-way pager 109, a personal computer (PC) 111, a gaming system 113, a television 115, a remote control 117, a settop box 119, and

a mobile phone 122)), a public switched telephone network (PSTN) 121, a cable network 123, and the Internet 125.

The registration server 101 is any computer, workstation, server computer, or other device and/or software for gathering registration information of consumers and their associated electronic devices and for storing and retrieving registration information in the registration database 102. Examples of server hardware include DECA alpha and Sun UltraSparc servers and the computer system 1001 of Figure 10. The registration server 101 provides interactive communication with various consumer electronic devices via the PSTN 121, the cable network 123, and the Internet 125.

The registration database 102 is a file that includes records that include registration information provided by consumers. The registration information includes consumer identifiers (CIDs), types of electronic devices, device identifiers (IDs), default promotions vehicle indicators, product categories, preferred retailers, retailer names, promotions vehicles, incentive vehicles, incentive vehicle IDs reward vehicles, reward vehicle IDs, promotion IDs, and/or reward triggers. Each record in the registration database 102 contains fields together with a set of operations for searching, sorting, recombining, and other database functions. The registration database 102 may be implemented as two or more databases, if desired.

Web appliance 103 is any household appliance (e.g., an electric range or refrigerator) that receives information via the Internet 125. Web appliance 103 may include all or a portion of the components of the computer system 1001 of Figure 10, such as a memory and a processor. Web appliance 103 may have its own Internet protocol (IP) address and/or be connected to a household server having its own IP address.

The mobile phones 105 and 122 are any suitable telephones using cellular, wireless, and/or other mobile technology for communicating with the registration server 101. The mobile phone 105 is connected to the registration server 101 through the Internet 125, and the mobile phone 122 is connected to the registration server 101 through the PSTN 121, by way of example.

PDA 107 is a palmtop computer for providing specific functions such as personal organization (e.g., calendar, note taking, database, and/or calculator) as well as communications. As shown in Figure 1, the PDA 107 communicates with the registration server 101 via the Internet 125. PDA 107 may include flash memory, a processor, and a pen



or other pointing device connected by an internal bus. According to one embodiment, PDA 107 employs Web browser software for displaying Web pages received from the registration server 101. Examples of PDA 107 include the Palm VII by Palm, Inc.

Two-way pager 109 is any suitable paging device for communicating with the registration server 101 through the Internet 125 or PSTN 121.

According to one embodiment, the consumer electronic devices connected to the PSTN 121 communicate with the registration server 101 through the Internet 125, which provides a gateway between the PSTN 121 and the registration server 101. Likewise, consumer electronic devices connected to the Internet 125 in Figure 1 communicate with the PSTN 121, which provides a gateway to the Internet 125 and the registration server 101.

PC 111 is any suitable desktop computer, workstation, laptop computer, palmtop computer, or other device, such as the computer system 1001 of Figure 10, for running Web browser software providing a user interface between the registration server 101 and a human user (e.g., a consumer) via the Internet 125. The Web browser software running on the PC 111 enables the PC 111 to store information identifying the Web browser software to the registration server 101, such as a cookie. Examples of PC 111 include Apple Macintosh computers and IBM compatible desktop computers.

Gaming system 113 is a computer connected to television 115 and for enabling video games to be played on the television 115. Examples of gaming system 113 are Sega Dreamcast and Sony PlayStation II. According to one embodiment, the gaming system 113 is equipped with Web browser software and provides a user interface to the registration server 101 via the Internet 125. Thus, a consumer may use a keyboard or other input device of the gaming system 113 to receive graphical information from the registration server 101 that is displayed on the television 115.

Settop box 119 is connected to the television 115 and the cable network 123. The settop box 119 provides interactive television programming to be displayed on the television 115. In one embodiment, the settop box 119 is also connected to the PSTN 121 so that commands received from the remote control 117 via infrared transmissions are transmitted to the registration server 101 via the PSTN 121. An exemplary interactive television system is described in U.S. Pat. No. 5,561,708, which is incorporated herein by reference.

PSTN 121 is an international telephone system carrying analog voice data. In place of, or in addition to, PSTN 121, other telephone networks such as integrated services digital network (ISDN) and fiber distributed data interface (FDDI), may be used to provide communication links between the consumer electronic devices in Figure 1 and the registration server 101. Also, PSTN 121 may provide a gateway to the Internet 125, such as where a standard modem is used to provide communications between PC 111 and the registration server 101 via the Internet 125.

Cable network 123 is any suitable network for providing cable television services. An example of a cable network 123 is a network of closed-circuit coaxial cables.

The Internet 125 is a wide area network (WAN) that includes gateways and networks that use TCP/IP protocols. Web appliance 103, mobile phone 105, PDA 107, two-way pager 109, PC 111, and gaming system 113 all communicate with the registration server 101 through the Internet 125 in the exemplary block schematic diagram of Figure 1.

Figure 2 is a block schematic diagram showing how promotions server 201, store computer 203, and promotions database 205 interrelate with various components of the system of Figure 1 to deliver promotions to consumers according to an embodiment of the invention. The promotion server 201 is software and/or hardware for delivering promotions to various consumer electronic devices. The promotion server 201 may be implemented on the same machine as the registration server 101 or may be implemented on a separate computer such as a DEC Alpha or Sun UltraSparc server. In alternate embodiments, multiple promotion servers are provided on one or more computers such as the computer system 1001 of Figure 10. The promotion server 201 stores and retrieves information in the registration database 102 and the global consumer database 301 (described below with reference to Figure 3) and communicates with the various consumer electronic devices through the PSTN 121, cable network 123, and/or Internet 125.

The store computer 203 is a computer that monitors transactions within a retail location, such as a grocery store, superstore, pet store, or hardware store, for example. The store computer 203 receives information of various promotions from the promotions servers 201 and stores this information in the promotions database 205. The store computer 203 monitors consumer purchases in the retail location as well as consumer inputs in the retail location (e.g., swiping a loyalty card through a magnetic strip reader at a kiosk in the retail

location). The store computer 203 uses information of promotions stored in the promotions database 205 and information provided by consumers in the retail location to determine whether consumers are redeeming a promotion, deliver redemption information to the promotions server 201, and/or reward consumers with incentives, for example.

The promotions database 205 is a file that includes records containing information for delivering, accepting, and/or redeeming incentives, coupons, and other promotions. Each record in the promotions database 205 includes fields together with a set of operations for searching, sorting, recombining, and other database functions. The promotions database 205 may be implemented as two or more databases, if desired.

Figure 3 is a block diagram showing how one or more retail stores 305 interrelate with one or more promotions servers 201. The global consumer database 301 is a file that includes records containing information for providing purchase incentives in accordance with the present invention. This purchase history information includes information of each purchase made by a customer in the retail store 315 as well as other retail stores in communication with the promotions server 201. Such information may include the shelf keeping unit (SKU), the brand, size, weight, price, date and time of purchase, and customer identification (customer ID) of the consumer making the purchase, for example. In one embodiment, portions of this information are obtained from bar codes on purchased items, which are scanned by scanner 321 during a transaction. Each record in the consumer database 301 contains fields together with a set of operations for searching, sorting, recombining, and other database functions. The consumer database 301 may be implemented as two or more databases, if desired. One or more of U.S. Pat. Nos. 5,832,457; 5,649,114; 5,430,644; and 5,592,560 describe techniques for collecting consumer purchase information and for storing such information in databases such as the consumer database 301. U.S. Pat. Nos. 5,832,457; 5,649,114; 5,430,644; and 5,592,560 are incorporated herein by reference. Additionally, techniques for collecting consumer purchase information and for storing such information in databases, such as the consumer database 301, are described in other patents owned by Catalina Marketing and/or Catalina Marketing International. Each patent owned by Catalina Marketing and/or Catalina Marketing International is incorporated herein by reference.

The retail store 305 is generically referred to as a retail location and is a place where goods are kept for retail sale to customers. The store computer 203 may be implemented using the computer system 801 of Figure 8, for example, or any other suitable PC, work station, server, or device for communicating with one or more promotions servers 201, for storing and retrieving information in the local purchase database 109, for monitoring data transmitted between the terminal 119 and the store controller 111 (i.e., transaction data) and for controlling the printer 117 and data transfer unit 323. According to one embodiment, the store computer 203 determines and delivers incentives or other promotions.

The store controller 311 is any computer or device for communicating with the terminal 319 and for using information stored in the store database 313 to carry out transactions at the point of sale (POS) 315. A description of an exemplary store controller 311 is found in U.S. Patent No. 5,173,851, which is incorporated herein by reference.

The store database 313 is a file that includes records containing information for carrying out transactions at the point of sale 315 by scanning bar codes printed on purchased items (e.g., UPC, JAN, and/or EAN codes). The records in the store database 313 contain fields for associating bar codes with products and their corresponding prices. The store database 313 also includes operations for searching, sorting, recombining, and other database functions, and may be implemented as two or more databases, if desired.

The retail store 305 includes one or more points of sale 315. Each point of sale 315 preferably includes a corresponding printer 317, a terminal 319, a scanner 312, and a data transfer unit 323. The data transfer unit 323 is coupled to the store computer 203 and provides a two-way data communication coupling 325 with hand held device 201. According to an embodiment of the present invention, data transfer unit 323 is used to exchange data relating to electronic promotions with hand held device 201. Purchase incentives are uploaded or downloaded by the data transfer unit 323 in response to receiving commands from the store computer 203 and/or hand held device 201, for example. Data transfer unit 323 may be implemented as a data port for transmitting and receiving data via a hard wired medium. As another example, data transfer unit 323 may be a wireless transceiver such as an infrared transmitter and detector, or a device for implementing Bluetooth radio link technology, developed by the Bluetooth special interest consortium. Bluetooth is a technology specification for small form factor, low cost, short range radio links between

mobile PCs, mobile phones, and other portable devices. Alternatively, the data transfer unit 323 may be implemented as any combination of suitable devices for providing two-way data communication coupling 325 so as to provide compatibility with a variety of hand held devices. According to one embodiment, data transfer unit 323 sends and receives electrical, electromagnetic or optical signals that carry digital data streams representing various types of information related to electronic promotions. Additionally, a hard copy of the electronic promotions transferred to the data transfer unit 323 may be printed on the printer 317 in response to receiving commands from the store computer 203, if desired.

The terminal 319 may be implemented as a standard cash register and may include a screen, credit card reader, and numeric key pad, for example. The terminal 319 communicates with the store controller 311 and the scanner 312. The scanner 312 may be implemented as any conventional scanning device for reading product information such as item codes (e.g., UDC, EAN, or JAN) from bar codes or other indicia on the product. This information read by the scanner 312 is transmitted to the store controller 311 via the terminal 319. The store controller 311, uses the scanned information and the information stored in the store database 313 to determine information of the transaction including product price, quantity, and product description, for example.

If there are multiple points of sale 315 within the retail store 305, then each terminal 319 is preferably arranged on a loop with the store controller 311. The store computer 203 is located in front of the store controller 311 on the loop so that information transmitted from the terminals to the store controller is monitored by the store computer 203.

The present invention stores information relating to registration of consumer electronic devices (e.g., registration information), generation of promotions, delivery of promotions (e.g., promotions vehicle information), and redemption of promotions (e.g., incentive vehicle information, reward vehicle information, reward information). This information is stored in one or more memories. One or more databases, such as databases 201, 205, 301, and 313 may store the information used to implement the present invention. The databases are organized using data structures (e.g., records, tables, arrays, fields, graphs, trees, and/or lists) contained in a memory. Suitable memories include hard disks, floppy disks, optical discs, magneto-optical disks, RAM, as well as any of the memories or computer readable media listed below in the discussion of Figure 10, for example. In implementing the

present invention, it may be preferable for one or more memories to take the place of a single memory, or for a single memory to take the place of two or more memories, depending on different design considerations, such as cost, storage capacity, and efficiency, as will be understood by one having ordinary skill in the art.

Figures 4A, 4B, 4C, and 4D depict data structures used for implementing a process and system for registering consumer electronic devices to gather registration information and for implementing a promotions system (e.g., a couponing, advertising, and/or incentive system) using the registration information. The data structures are depicted in a relational format, using tables, whereby information stored in one column (i.e., field) of a table is associated, mapped, or linked to information stored in the same row (i.e., record) in the other column(s) of the table. These data structures are used by the promotions server 201 and store computer 203 to deliver, accept, and/or redeem promotions. The data structures shown in Figures 4A, 4B, 4C, and 4D are stored in databases 102, 205, 301, or 313, or any other suitable storage device(s). It is to be understood that the data structures shown in Figures 4A, 4B, 4C, and 4D are for exemplary purposes only, as the actual implementation of how data is stored will vary depending on the particular software or hardware used to implement the database as well as other design considerations such as storage capacity and search speed, for example.

Figure 4A is an electronic device table 401 that includes a field 403 for storing consumer identifiers (CIDs), a field 405 for identifying different types of consumer electronic devices, a field 407 for storing device IDs, and a field 408 for storing an indication whether the corresponding device is the default promotions vehicle. The electronic device table 401 stores information of consumers and associates that information with one or more consumer electronic devices that the consumer has registered with the system of Figure 1. The CID is any information for identifying a consumer or household. Examples of CIDs are loyalty card numbers, credit card numbers, IP addresses, cookies stored on a computer used by a consumer, social security numbers, telephone numbers, street addresses, e-mail addresses, license plate numbers, driver's license numbers, frequent shopper card numbers, shopper card IDs, user IDs, login IDs, passwords, or any information identifying a consumer electronic device associated with a consumer or any other information for identifying one or more consumers and/or households. A CID may also be a fingerprint, features of a consumer's

retina, or features of a consumer's voice, or any other personally identifying information. This type of CID may be recognized at the point of sale 315 or any other location by using electronic fingerprint recognition, retina scanning, and/or voice recognition, for example.

The device type stored in the field 405 indicate the type of consumer electronic device. Each device is numbered so if a consumer has more than one of the same device, then the first device receives the number 1 and the second device receives the number 2 and so on. As shown in the exemplary electronic device in table 401, the consumer with CID 5678 is associated with two mobile phones, denoted mobile phone 1 and mobile phone 2, respectively, and the field 405. The device ID in the field 407 is any information for identifying a way to communicate with the device in the field 405. The device ID and the CID may be the same identifier, for example, if the consumer uses his or her mobile phone telephone number as his or her CID and as the device ID for that mobile phone. The default promotions vehicle indicators in the field 405 indicate whether the corresponding device in the field 405 is the default device for receiving promotions from the promotions server 201. In a preferred embodiment, the consumer selects one default promotions vehicle from among the devices that he or she has registered. Thus, a promotions vehicle is any electronic device selected by a consumer to receive promotions and that includes an interface for delivering received promotions to a consumer. Examples of such an interface include a display screen for displaying promotions, a speaker for playing promotions, and a printer for printing promotions on paper.

Figure 4B is a preferred retailer table 409 that includes a field 411 for storing CIDs, a field 413 for storing product categories, and a field 415 for storing preferred retailers. The product categories indicate various classes of products such as groceries, meats, vegetables, books, magazines, music, hardware, pet supplies, furniture, and stereo equipment, for example. Each product category also has a number (e.g., "Groceries # 1") corresponding to each consumer's ranking of the retailer in the same record in the field 415. For example, in the exemplary preferred retailer table 409, the consumer with CID 1234 has selected Safeway as his or her number one ranked retailer, and Super Fresh and Giant are the number two and three ranked retailers, respectively, in the "Groceries" categories. A preferred merchant or preferred retailer of a consumer is a retailer selected by the consumer and for which promotions delivered to the consumer will relate. Depending on the particular promotion,

one or more of the promotions delivered to a consumer will apply to and/or be honored by at least one of the preferred merchants selected by the consumer.

Figure 4C is a vehicle table 417 that includes field 419 for storing CIDs, field 421 for storing retailers, field 423 for storing promotions vehicles, field 425 for storing incentive vehicles, field 427 for storing incentive vehicle IDs, field 429 for storing reward vehicles, and field 431 for storing reward vehicle IDs. The vehicle table 417 associates each retailer for a particular CID with a promotions vehicle, an incentive vehicle, and a reward vehicle. Each promotions vehicle in the field 423 corresponds to a device in the field 405 of the electronic device table 401. In one embodiment, the promotions vehicles in the field 423 are selected from among the electronic devices in the field 405 that the consumer has registered.

Accordingly, each retailer is associated with a promotions vehicle selected by the corresponding consumer (in this case, the consumer associated with the CID 1234), and the promotions vehicle for each retailer is associated with a device ID in the field 407 that permits promotions to be delivered to the promotions vehicle listed in the field 423. Similarly, the field 425 stores the incentive vehicle selected by the consumer for the corresponding retailer in the field 421. The incentive vehicle ID in the field 427 identifies the particular incentive vehicle in the field 425. In the exemplary vehicle table 417, the consumer has selected his or her loyalty card as the incentive vehicle for Safeway, and the loyalty card has an ID of AABBCC. The incentive vehicle is any item or device for identifying a consumer with respect to the corresponding retail location in the field 421. For example, the consumer with CID 1234 receives promotions for Ralph's on his or her personal computer in the form of a Web page that the consumer prints out and brings to Ralph's as the incentive vehicle. In this example, the Web page has the consumer's CID, which is used as the incentive vehicle ID (i.e., 1234). Other examples of incentive vehicles are personal identification numbers (PINs) that are entered at the retail location or from a computer or with a touch tone phone, e-mail addresses, or any other identifier such as a CID.

The reward vehicle indicates the way in which the consumer is to be rewarded for complying with the terms of the incentive or other promotion delivered to the promotions vehicle. The reward vehicle ID uniquely identifies the reward vehicle. In the vehicle table 417, the consumer's VISA card is credited. Other examples of reward vehicles are checking accounts, savings accounts, store credit, and cash.



According to one embodiment, the tables 401, 409, and 417 are stored in the registration database 102. The promotions server 201 uses tables stored in the registration database 102 and/or the promotions database 205 to generate, deliver, and monitor the redemption of promotions. However, it is to be appreciated that the information used to implement the present invention may be stored in any variety of ways, as will be understood by one skilled in the art.

Figure 4D is a reward table 433 with a field 435 for storing CIDs, a field 437 for storing promotion IDs, and field 439 for storing reward triggers. The promotion IDs in the field 437 identify the promotion delivered to a consumer. If the promotion IDs are unique for each promotion, then coupon fraud may be prevented by determining whether a particular promotion has already been redeemed by keeping track of the promotion IDs of redeemed promotions. Promotion IDs may be any suitable identifier for identifying a promotion, including a CID, device ID, incentive vehicle ID, reward vehicle ID, or any other identifier. Likewise, one or more incentive vehicle IDs in the field 427 may be the same as one or more promotion IDs. The reward triggers in the field 439 are used by the store computer 203 and/or the promotion server 201 to determine whether a consumer has met any conditions that may be required for the consumer to receive the reward. For example, the reward trigger may be a UPC code that the store computer 203 detects being transmitted from the terminal 319 to the store controller 311. A reward trigger may also be a CID, incentive vehicle ID, reward vehicle ID, device ID, or other identifier. For example, the consumer may be rewarded simply for bringing a printout of his or her personal Web page to the store and having a bar code on the Web page scanned. In this case, the incentive vehicle ID (i.e., a unique bar code on the Web page) could also be the reward trigger.

It is to be understood that the tables 401, 409, 417, and 433 are for exemplary purposes only and may be tailored to suit different marketing schemes and promotions. For example, if the reward is simply cash credit during a transaction in a retail location, then there is no need for identifying reward vehicles and reward vehicle IDs. Similarly, if the promotion ID in the field 437 is also the reward trigger for each promotion, then there is no need to include the field 439 in the reward table 433.

Figure 5A, 5B, and 5C are flow charts for explaining how consumers register electronic devices and their retailer preferences and conferred incentive and promotions

vehicles with the registration server 101. Specifically, Figure 5A is a flowchart explaining how one or more electronic devices of a consumer is registered with the system of Figure 1. In step 501 the consumer uses an electronic device to log into the registration server 101, and the registration server 101 receives the login request from the consumer's electronic device. The login process may include the user supplying a user name (e.g., the consumer's CID) and password (e.g., a personal identification number (PIN)). If the consumer has not already established a user name and password with the registration server 101, then the registration server 101 prompts the user to enter this information, via the consumer's electronic device.

In step 503, the registration server 101 sends a prompt to the consumer's electronic device to enter the consumer's CID. As noted above, the consumer's CID is any information used to identify the consumer or the consumer's household. In step 505, the registration server 101 receives the consumer's CID from the consumer's electronic device in response to the consumer inputting his or her CID into the electronic device.

If the consumer has already selected a default promotions vehicle with the registration server 101 in a past registration session, then steps 507, 509, and 511 may be skipped at the option of the consumer. In step 507 the registration server 101 sends a prompt to the electronic device to enter the default promotions vehicle and corresponding device ID. The default promotions vehicle is an electronic device selected by the consumer to receive promotions from the promotions server 201. The device ID is an identifier, such as a telephone number or e-mail address, that permits the promotions server 201 to send promotions and/or other information to the corresponding electronic device. In step 509, the registration server 101 receives the consumer's default promotions vehicle selection and corresponding device ID from the consumer's electronic device. Then, in step 511, the registration server 101 associates the selected default promotions vehicle, corresponding device ID, and the consumer's CID and stores this information in the electronic device table 401 in the registration database 102.

In step 513, the registration server 101 sends to the consumer's electronic device a prompt to register additional electronic devices. In step 515, the registration server 101 receives from the consumer's electronic device an indication whether the consumer wishes to register additional electronic devices with the registration server 101. If the consumer wishes to register additional electronic devices, then in step 517 the registration server 101 receives a

device type and corresponding device ID of the additional electronic devices that the consumer wishes to register and associates this information in the electronic device table 401 in the registration database 102. Then, the process returns to step 513. If, in step 515, the consumer indicates that there are no additional electronic devices to be registered, then the process proceeds to step 519.

In step 519, the registration server 101 sends to the consumer's electronic device a prompt to enter a preferred retailer in a product category. Then, in step 521, the registration server 101 receives the consumer's preferred retailer selection in the product category from the consumer's electronic device. In step 523, the registration server 101 associates the consumer's CID and product category with the selected preferred retailer and stores this information in the preferred retailer table 49 in the registration database 102.

Next, in step 525, the registration server 101 determines whether promotions and incentive vehicles are already stored for the preferred retailer selection received from the consumer in step 521. If the registration server 101 determines that promotions and incentive vehicles have not already been stored for the preferred retailer, then in step 527 the registration server sends a prompt to the electronic device to determine whether the default promotions vehicle is to be used for the preferred retailer selection. In step 529, the registration server 101 receives from the electronic device the consumer's indication whether the default promotions vehicle is to be used for the preferred retailer selected by the consumer. If the default promotion vehicle is not to be used, then the process proceeds to step 531. In step 531 the registration server 101 sends the consumer's electronic device a prompt to enter a promotions vehicle for the preferred retailer selection. In step 533, the registration server 101 receives from the consumer's electronic device a promotions vehicle selection. Then, the process proceeds to step 535.

In step 525, if the registration server 101 determines that promotions and incentive vehicles are already stored for the preferred retailer then the registration server sends to the electronic device a prompt to determine if the existing settings (i.e., the promotions and incentive vehicle already stored for the preferred retailer) are to be used with the selected retailer. In step 549, the registration server 101 receives from the consumer's device an indication whether the existing settings are to be used. If the existing settings are not be used then the process proceeds to step 528. If the existing settings are to be used, then the process

proceeds to step 535. Likewise, if the consumer indicates that the default promotions vehicle is to be used in step 529, then the process proceeds to step 535.

In step 535, the registration server 101 sends to the consumer's electronic device a prompt to enter preferred incentive and reward vehicles for the preferred retailer selection. In step 537, the registration server 101 receives from the consumer's electronic device the preferred incentive and reward vehicles selected by the consumer.

Then, in step 539 the registration server 101 sends to the consumer's electronic device a prompt to enter incentive and reward vehicle identifications corresponding to the selected incentive and reward vehicles, respectively. In step 541, the registration server 101 receives from the electronic device the incentive and reward vehicle identifications that the user has input to the electronic device. In step 543, the registration server associates the consumer's CID and preferred retailer selection with the promotions vehicle selection, the incentive vehicle selection, the incentive vehicle ID, the reward vehicle, and the reward vehicle ID. This information is stored in the vehicle table 417 in the registration database 102.

In step 545, the registration server 101 determines if there are more product categories for which the consumer has not selected preferred retailers. If there are no more product categories, then the process ends. If there are more product categories for which the consumer has not selected a preferred retailer, then the process returns to step 519. In a preferred embodiment, the product categories identify a class of product as well as a rank. For example, product categories "bulk groceries # 1" and "bulk groceries # 2" correspond to the consumer's most preferred and second most preferred retailers, respectively, in the bulk groceries product category.

Accordingly, one of the advantages of the present invention is that consumers can register their preferences for receiving, accepting, and redeeming promotions. The present invention stores preferred merchants, preferred devices for receiving promotions (i.e., promotions vehicles), and preferred methods for accepting and redeeming promotions (e.g., incentive vehicles and reward vehicles). As used herein the term "preferred" does not refer to the subjective intent of a consumer, but refers to the choices made by the consumer in selecting merchants, electronic devices, etc. during the registration process. Thus, a preferred merchant of the consumer is not necessarily the consumer's favorite merchant, but merely a merchant that the consumer selected during the registration process.

It is to be understood that any of the steps in Figures 5A, 5B, and 5C may be skipped if the registration server already possesses the information obtained from the consumer in those steps. Also, in a preferred embodiment, the consumer may log into the registration server 101 and change his or her selections at any time. Further, it is to be understood that the registration process is flexible and may be tailored to accommodate different electronic devices. For example, if the consumer registers with a computer, then all of the registration information may be input into a single HTML page received by the consumer's computer from the registration server 101 via the Internet 125.

Figure 6 is an exemplary flow chart explaining how a consumer may register with the system of Figure 1, using his or her PC 111. In step 601, the consumer uses his or her PC 111 to access a Web site hosted by the registration server 101. The registration server 101 receives a request to register electronic devices from a remote computer, and in step 603 sends to the remote computer a registration document (e.g., a HTML page) prompting the user to enter registration information for different electronic devices.

In step 605, the registration server 101 receives from the remote computer registration information of one or more electronic devices that the consumer wishes to register with the registration server 101. According to one embodiment, this registration information includes the consumer's CID, the types of different electronic devices that the consumer wishes to register, device identifiers corresponding to the electronic devices that the consumer is registering, indications whether or not the registered electronic device is to be the default promotions vehicle, and preferred retailer selections for various product categories. Also, the registration server 101 receives from the PC 111 registration information stored in the vehicle table 417, including promotions vehicle selections, incentive vehicle selections, incentive vehicle IDs, reward vehicle selections, and reward vehicle IDs for the selected preferred retailers.

In step 607, the registration server 101 associates the consumer's CID with the electronic device types and corresponding device IDs and the indication whether each electronic device is to be the default promotions vehicle. This information is stored in the electronic device table 401 of Figure 4A, as discussed above.

In step 609, the registration server 101 associates the consumer's CID with the different product categories and corresponding preferred retailer selected by the consumer. This information is stored in the preferred retailer table 409 of Figure 4B.

In step 611, the registration server 101 associates the consumer's CID and preferred retailer selections with the corresponding promotions vehicle selections, incentive vehicle selections, incentive vehicle IDs, reward vehicle selections, and reward vehicle IDs. This information is stored in the vehicle table 417 of Figure 4C.

Figure 7 is a flowchart for explaining how promotions are delivered to electronic devices in the system of Figure 2, according to an embodiment of the invention. In step 703, the promotion server 201 receives promotion information, including one or more product categories and target criteria for the promotions to be generated. In step 705, the promotion server 201 determines which consumers that have registered with the registration server 101 meet the target criteria. The target criteria are marketing or other indicators for classifying consumers into behavioral categories. For example, if a promotion is to be targeted to people who purchase little Brand X soda, then the promotion server 201 uses the information stored in the global consumer database 301 to determine which consumers meet the target criteria. If the target criteria for light Brand X soda users is any consumer that has purchased from 1 to 1.5 liters of brand X soda on average each month for the last three months, then all such consumers whose purchase history information meets the target criteria, are identified as targets to receive the promotion.

In step 707, the promotions server 201 generates promotions, such as incentives, based on the promotion information and the registration information of consumers meeting the target criteria. For example, if the promotion is to be delivered to light Brand X soda drinkers, then the product categories for the promotion might be groceries # 1, groceries # 2, and groceries # 3. In this case, promotions are generated for the three corresponding retailers and the corresponding promotions vehicles, incentive vehicles, and reward vehicles. Thus, if the promotion information is obtained from the exemplary preferred retailer table 409 and vehicle table 417, then the retailers will be Safeway, SuperFresh, and Giant, the promotions vehicle will be mobile phone 1, the incentive vehicle will be the consumer's loyalty card at each of the corresponding retailers, and the reward vehicle will be the consumer's VISA credit card.

In step 709, the promotions server 201 assigns each promotion (in this case, an electronic incentive) an incentive ID to uniquely identify each promotion. Then, in step 711, the registration server 201 associates each incentive ID with the CID corresponding to the consumer to whom the electronic incentive is to be sent. In step 713, the promotions server 201 generates reward tables, such as the reward table 433, for each retailer at which consumers may redeem the incentives. In step 715, the reward tables are delivered to the retailers. Then, in step 717, the electronic incentives are delivered to the promotions vehicles corresponding to the preferred retailers of the consumer. Thus, a consumer may receive all promotions on a single electronic device if he has registered that electronic device as the promotions vehicle for each retailer.

Figure 8A is a flowchart for explaining how electronic incentives delivered with the system of Figure 2 are redeemed, according to one embodiment of the invention. In step 801, the store computer 203 in Figure 3 receives an incentive ID and/or an incentive vehicle ID from the consumer at the point of sale 315. In one embodiment, the incentive ID or incentive vehicle ID is received by the store computer 203 when a clerk at the point of sale 315 scans a bar code on the incentive (i.e., the incentive ID) or a bar code on the consumer's loyalty card (i.e., the consumer's incentive vehicle ID). In step 803, the store computer 203 determines whether the consumer is eligible for a reward. Step 803 is performed by the store computer 203 checking the promotions database 205 for the reward trigger. If the reward trigger is the incentive vehicle ID provided by the consumer or if the promotion ID is one of the promotion IDs stored in the field 437, then in step 805 the store computer 203 rewards the consumer, based on the selected reward vehicle and the field 429 of the vehicle table 417. For example, if the reward vehicle is cash, then the store computer communicates with the store controller 311 to have the dollar amount of the reward deducted from the consumer's total purchase. If the reward vehicle is the consumer's VISA credit card, then the store computer 203 causes the consumer's VISA card to be credited with the amount of the reward, using the reward vehicle ID (in this case, the credit card number) in the field 431. In step 807, the store computer 203 sends to the promotions server 201 an indication that the consumer has redeemed the electronic incentive. In this manner, the same incentive may be prevented from being redeemed twice by the same or a different consumer.

Figure 8B is a flowchart for explaining an alternate method for redeeming incentives with the system of Figure 3. In step 809, the store computer 203 receives a promotion ID and/or incentive vehicle ID from the point of sale 315, as in step 801. In step 811, the store computer 203 determines whether the consumer is eligible for a reward, as in step 803. If the consumer is eligible for a reward, then the store computer 203 sends to the promotions server 201 an indication that the consumer has redeemed the incentive. Then, in step 815, the promotion server 201 determines whether the consumer has previously redeemed the incentive. If the consumer has previously redeemed the incentive, then the consumer is not rewarded and the process returns to step 809. If, in step 815, the promotions server 201 determines that the consumer has not previously redeemed the incentive, then in step 817 the promotions server 201 rewards the consumer, based on the selected reward vehicle. As noted above, a consumer may be rewarded in many different ways, whether the promotion server 201 or the store computer 203 rewards the consumer. For example, the promotion server 201 may credit the consumer's credit card if the consumer has selected his or her credit card as the reward vehicle in the field 429. In an alternative embodiment, the promotion server 201 rewards the consumer by sending back to the store computer 203 an indication that the consumer is to be rewarded with a printed coupon or certificate the next time the consumer presents his or her incentive vehicle at the point of sale 315 in the retail store 305. In this case, the next time the consumer's loyalty card is scanned at a point of sale 315 in the retail store 305, then the store computer 203 causes the printer 317 to automatically deliver the reward by printing a coupon or certificate that is given to the consumer by a clerk at the point of sale 315.

Figure 9A is an exemplary electronic incentive 901 that is delivered by the promotion server 201 and displayed on an electronic device such as Web appliance 103, mobile phone 105, PDA 107, two-way pager 109, PC 111, gaming system 113, mobile phone 122, and/or television 115. The electronic incentive 901 includes field 903 indicating the reward, a field 905 indicating the preferred retailer, and a field 907 indicating the incentive vehicle.

Figure 9B is an exemplary electronic incentive 909 in the form of a personal Web page. The Web page may be delivered to the PC 111 or PDA 107 or any other consumer electronic device with Web browser software for requesting, receiving, and displaying web pages. The electronic incentive 909 may be sent to consumer electronic devices by the



promotion server 201. The electronic incentive 909 includes a field 911 indicating the reward, a field 913 indicating the reward vehicle, and a field 915 with the promotion ID (in this case, a bar code). The electronic incentive 909 is printed out with a printer attached to PC 111. Then, the printed version of the electronic coupon is presented at the point of sale 315 where the promotion ID 915 is scanned by the scanner 321. An exemplary personal Web page is the ValuPage generated by Supermarkets Online, Inc.

As noted above, the present invention is flexible and may be tailored to accommodate different consumer electronic devices. As another example, a consumer electronic device, such as a PDA, may be configured to carry and transmit electronic incentives, and thus, become both a promotions vehicle and an incentive vehicle. Other mobile devices may also carry and transmit electronic incentives. For example, electronic incentives may be delivered to PDA 107, stored on the PDA 107, and redeemed by downloading information from the PDA 107 at the data transfer unit 323 at the point of sale 315. The PDA 107 and data transfer unit 323 may communicate using WAP, Bluetooth and/or any other suitable protocol.

As another example, a promotion may be delivered to a consumer's television set via the consumer's interactive TV settop box 119. According to one embodiment, the consumer tunes to a specific channel or selects a registration option with his or her remote control 117. The consumer is then prompted to enter a unique PIN (e.g., the consumer's CID) that identifies the consumer or his or her household. The consumer is prompted to set up options for other members of the household (e.g., restrictions on who can accept offers, purchase items, etc.). The consumer is then prompted to select product categories for which they would like to receive incentives, information, and/or samples. Then, the consumer is prompted to enter preferred retailers at which the consumer would like to redeem accepted incentives, in the order of preferences of the merchants. Lastly, the consumer is prompted to \_\_\_\_\_

retrieved from the registration server 101 or a kiosk within the retail store 305 by an electronic device that the consumer has registered. Confirmation of the acceptance of the promotion may be sent to the consumer via the interactive television medium, an e-mail, or any other medium for communicating with one of the electronic devices that the consumer has registered.

The mobile device may be registered by using the mobile device to move on to a specific Web site (e.g., a Web site posted by the registration server 101) and to provide registration information to the registration server 101, using the mobile device, as set forth in Figures 5A, 5B, and 5C. In another embodiment, a consumer registers the mobile device (i.e., PDA) as part of another registration (e.g., through interactive television, as discussed above, or through PC 111, as discussed with respect to Figure 6). The registration, electronic incentives are delivered to the mobile device of the promotion server 201 and stored on the mobile device. Transfer of registration information required to redeem the incentive takes place by docking the mobile device at the point of sale 115 or through wireless communication such as glued to the floor a wireless application protocol (WAP).

All or a portion of the invention may be conveniently implemented using conventional general purpose computers or microprocessors programmed according to the teachings of the present invention, as will be apparent to those skilled in the computer art. Appropriate software can be readily prepared by programmers of ordinary skill based on the teachings of the present disclosure, as will be apparent to those skilled in the software art.

Figure 10 illustrates a computer system 1001 upon which an embodiment of the present invention may be implemented. Computer system 1001 includes a bus 1003 or other communication mechanism for communicating information, and a processor 1005 coupled with bus 1003 for processing the information. Computer system 1001 also includes a main memory 1007, such as a random access memory (RAM) or other dynamic storage device (e.g., dynamic RAM (DRAM), static RAM (SRAM), and synchronous DRAM (SDRAM)), coupled to bus 1003 for storing information and instructions to be executed by processor 1005. In addition, main memory 1007 may be used for storing temporary variables or other intermediate information during execution of instructions to be executed by processor 1005. Computer system 1001 further includes a read only memory (ROM) 1009 or other static storage device (e.g., programmable ROM (PROM), erasable PROM (EPROM), and

electrically erasable PROM (EEPROM), and flash ROM) coupled to bus 1003 for storing static information and instructions for processor 1005. A storage device 1011, such as a magnetic disk or optical disc, is provided and coupled to bus 1003 for storing information and instructions.

The computer system 1001 may also include special purpose logic devices (e.g., application specific integrated circuits (ASICs)) or configurable logic devices (e.g., generic array of logic (GAL) or reprogrammable field programmable gate arrays (FPGAs)). Other removable media devices (e.g., compact discs, tape, and removable magneto-optical media) or fixed, high density media drives, may be added to the computer system 1001 using an appropriate device bus (e.g., a small computer system interface (SCSI) bus, an enhanced integrated device electronics (IDE) bus, or an ultra-direct memory access (DMA) bus). The computer system 1001 may additionally include a compact disc reader, a compact disc reader-writer unit, or a compact disc juke box, each of which may be connected to the same device bus or another device bus.

Computer system 1001 may be coupled via bus 1003 to a display 1013, such as a cathode ray tube (CRT), for displaying information to a computer user. The display 1013 may be controlled by a display or graphics card. The computer system includes input devices, such as a keyboard 1015 and a cursor control 1017, for communicating information and command selections to processor 1005. The cursor control 1017, for example, is a mouse, a trackball, or cursor direction keys for communicating direction information and command selections to processor 1005 and for controlling cursor movement on the display 1013. In addition, a printer may provide printed listings of the data structures and information shown in Figures 4A, 4B, 4C, and 4D or any other data stored and/or generated by the computer system 1001.

The computer system 1001 performs a portion or all of the processing steps of the invention in response to processor 1005 executing one or more sequences of one or more instructions contained in a memory, such as the main memory 1007. Such instruction, may involve, for example, the registration of consumer electric devices and the generation, delivery, and redemption of promotions, using registration information. Such instructions may be read into the main memory 1007 from another computer readable medium, such as storage device 1011. One or more processors in a multi-processing arrangement may also be

employed to execute the sequences of instructions contained in main memory 1007. In alternative embodiments, hard-wired circuitry may be used in place of or in combination with software instructions. Thus, embodiments are not limited to any specific combination of hardware circuitry and software.

As stated above, the system 1001 includes at least one computer readable medium, memory, or computer code device programmed according to the teachings of the invention and for containing data structures, tables, records, or other data described herein. Stored on any one or on a combination of computer readable media, the present invention includes software for controlling the computer system 1001, for driving a device or devices for implementing the invention, and for enabling the computer system 1001 to interact with a human user (e.g., a consumer). Such software may include, but is not limited to, device drivers, operating systems, development tools, and applications software. Such computer readable media further includes the computer program product of the present invention for performing all or a portion (if processing is distributed) of the processing performed in implementing the invention. The computer code devices of the present invention may be any interpreted or executable code mechanism, including but not limited to scripts, interpreters, dynamic link libraries, Java classes, and complete executable programs. Moreover, parts of the processing of the present invention may be distributed for better performance, reliability, and/or cost.

The term "computer readable medium" as used herein refers to any medium that participates in providing instructions to processor 1005 for execution. A computer readable medium may take many forms, including but not limited to, non-volatile media, volatile media, and transmission media. Non-volatile media includes, for example, optical discs, magnetic disks, and magneto-optical disks, such as storage device 1011. Volatile media includes dynamic memory, such as main memory 1007. Transmission media includes coaxial cables, copper wire and fiber optics, including the wires that comprise bus 1003. Transmission media also may also take the form of acoustic or light waves, such as those generated during radio wave and infrared data communications.

Common forms of computer readable media include, for example, hard disks, floppy disks, tape, magneto-optical disks, PROMs (EPROM, EEPROM, Flash EPROM), DRAM, SRAM, SDRAM, or any other magnetic medium, compact disks (e.g., CD-ROM), or any

other optical medium, punch cards, paper tape, or other physical medium with patterns of holes, a carrier wave (described below), or any other medium from which a computer can read.

Various forms of computer readable media may be involved in carrying out one or more sequences of one or more instructions to processor 1005 for execution. For example, the instructions may initially be carried on a magnetic disk of a remote computer. The remote computer can load the instructions for implementing all or a portion of the present invention remotely into a dynamic memory and send the instructions over a telephone line using a modem. A modem local to computer system 1001 may receive the data on the telephone line and use an infrared transmitter to convert the data to an infrared signal. An infrared detector coupled to bus 1003 can receive the data carried in the infrared signal and place the data on bus 1003. Bus 1003 carries the data to main memory 1007, from which processor 1005 retrieves and executes the instructions. The instructions received by main memory 1007 may optionally be stored on storage device 1011 either before or after execution by processor 1005.

Computer system 1001 also includes a communication interface 1019 coupled to bus 1003. Communication interface 1019 provides a two-way data communication coupling to a network link 1021 that is connected to a local network (e.g., LAN 1023). For example, communication interface 1019 may be a network interface card to attach to any packet switched local area network (LAN). As another example, communication interface 1019 may be an asymmetrical digital subscriber line (ADSL) card, an integrated services digital network (ISDN) card or a modem to provide a data communication connection to a corresponding type of telephone line. Wireless links may also be implemented. In any such implementation, communication interface 1019 sends and receives electrical, electromagnetic, or optical signals that carry digital data streams representing various types of information.

Network link 1021 typically provides data communication through one or more networks to other data devices. For example, network link 1021 may provide a connection through LAN 1023 to a host computer 1025, another computer system 1001, or to data equipment operated by a service provider, which provides data communication services through an IP (Internet Protocol) network 1027 (e.g., the Internet 125). LAN 1023 and IP

network 1027 both use electrical, electromagnetic, or optical signals that carry digital data streams. The signals through the various networks and the signals on network link 1021 and through communication interface 1019, which carry the digital data to and from computer system 1001, are exemplary forms of carrier waves transporting the information. Computer system 1001 can transmit notifications and receive data, including program code, through the network(s), network link 1021 and communication interface 1019.

Obviously, numerous modifications and variations of the present invention are possible in light of the above teachings. It is therefore to be understood that within the scope of the appended claims, the invention may be practiced otherwise than as specifically described herein.

CLAIMS:

## 1. A method comprising:

receiving from an electronic device a consumer identifier, preferred merchant information, and promotions vehicle information, the consumer identifier corresponding to a consumer, the preferred merchant information corresponding to a preferred merchant of the consumer, the promotions vehicle information corresponding to a preferred device of the consumer for receiving promotions; and

associating the consumer identifier with the preferred merchant information and the promotions vehicle information.

## 2. The method of claim 1, further comprising:

sending to the electronic device a merchant registration prompt for the consumer to identify the preferred merchant of the consumer; and

sending to the electronic device a promotions vehicle prompt for the consumer to select the preferred device of the consumer for receiving promotions.

3. A method according to claim 1, wherein the consumer identifier is selected from the group consisting of: a consumer identifier, loyalty card number, cookie, IP address, telephone number, and an e-mail address.

4. A method according to claim 1, further comprising associating the preferred merchant information and the consumer identifier with a device identifier corresponding to the electronic device.

5. A method according to claim 4, further comprising delivering to the electronic device a promotion corresponding to the preferred merchant, using the device identifier, the promotions vehicle information comprising the device identifier and the preferred device comprising the electronic device.

6. A method according to claim 1, further comprising delivering information of a promotion to a remote computer associated with the preferred merchant, the information of the promotion including the consumer identifier.

7. A method according to claim 1, wherein the promotions vehicle information includes a promotions vehicle identifier identifying a promotions vehicle comprising the preferred device, and

the method further comprises the step of delivering a promotion to the promotions vehicle.

8. A method according to claim 1, further comprising receiving from the electronic device an incentive vehicle identifier corresponding to an incentive vehicle for redeeming promotions delivered to the promotions vehicle.

9. A method according to claim 8, further comprising receiving from the electronic device reward vehicle information corresponding to a reward vehicle by which the consumer is rewarded.

10. A method according to claim 9, further comprising:  
receiving again the incentive vehicle identifier in response to a purchase transaction of the consumer;  
determining whether the consumer qualifies to receive a reward; and  
rewarding the consumer if the consumer qualifies to receive the reward, using the reward vehicle information.

11. A method according to claim 1, further comprising:  
receiving additional preferred merchant information corresponding to additional preferred merchants of the consumer; and  
associating the additional preferred merchant information with the consumer identifier.

12. A method comprising:



storing in association a consumer identifier, preferred merchant information, and a promotions vehicle identifier, the consumer identifier corresponding to a consumer, the preferred merchant information corresponding to a preferred merchant of the consumer, the promotions vehicle identifier identifying a promotions vehicle comprising a preferred device of the consumer for receiving promotions;

generating an incentive based on the preferred merchant of the consumer; and

delivering to the promotions vehicle a promotion corresponding to the preferred merchant, using the promotions vehicle identifier.

13. A method according to claim 12, further comprising storing the preferred merchant information in association with a product category, wherein the promotion corresponds to the product category.

14. A method according to claim 12, further comprising storing a device identifier corresponding to another electronic device in association with the preferred merchant information and the consumer identifier.

15. A method according to claim 12, further comprising delivering information of the promotion to the preferred merchant, the information of the promotion including the consumer identifier.

16. A method according to claim 12, further comprising storing an incentive vehicle identifier in association with the preferred merchant information, the incentive vehicle identifier corresponding to an incentive vehicle for redeeming promotions delivered to the promotions vehicle.

17. A method according to claim 16, further comprising storing reward vehicle information corresponding to a reward vehicle by which the consumer is rewarded.

18. A method according to claim 17, further comprising:

receiving the incentive vehicle identifier in response to a purchase transaction of the consumer;

determining whether the consumer qualifies to receive a reward; and

rewarding the consumer if the consumer qualifies to receive the reward, using the reward vehicle information.

19. A computer readable medium containing program instructions for execution on a computer system, which when executed by a computer, cause the computer system to perform the method recited in any one of claims 1 to 18.

20. A system comprising:

a memory having embodied therein registration information;

a processor in communication with the memory, the processor configured to:

receive from an electronic device a consumer identifier, preferred merchant information, and promotions vehicle information, the consumer identifier corresponding to a consumer, the preferred merchant information corresponding to a preferred merchant of the consumer, the promotions vehicle information corresponding to a preferred device of the consumer for receiving promotions; and

associate the consumer identifier with the preferred merchant information and the promotions vehicle information.

21. The system of claim 20, wherein the processor is further configured to:

send to the electronic device a merchant registration prompt for the consumer to identify the preferred merchant of the consumer; and

send to the electronic device a promotions vehicle prompt for the consumer to select the preferred device of the consumer for receiving promotions.

22. A system according to claim 20, wherein the consumer identifier is selected from the group consisting of: a consumer identifier, loyalty card number, cookie, IP address, telephone number, and an e-mail address.

23. A system according to claim 20, wherein the processor is further configured to associate the preferred merchant information and the consumer identifier with a device identifier corresponding to the electronic device.

24. A system according to claim 23, wherein the processor is further configured to deliver to the electronic device a promotion corresponding to the preferred merchant, using the device identifier, the promotions vehicle information comprising the device identifier and the preferred device comprising the electronic device.

25. A system according to claim 20, wherein the processor is further configured to deliver information of a promotion to a remote computer associated with the preferred merchant, the information of the promotion including the consumer identifier.

26. A system according to claim 20, wherein the promotions vehicle information comprises a promotions vehicle identifier identifying a promotions vehicle comprising the preferred device, and  
the processor is further configured to deliver a promotion to the promotions vehicle.

27. A system according to claim 26, wherein the promotions vehicle is one of a personal data assistant, a mobile telephone, and a pager.

28. A system according to claim 26, wherein the preferred device comprises the electronic device.

29. A system according to claim 26, wherein the preferred device comprises another electronic device.

30. A system according to claim 20, wherein the processor is configured to receive from the electronic device an incentive vehicle identifier corresponding to an incentive vehicle for redeeming promotions delivered to the promotions vehicle.

31. A system according to claim 30, wherein the processor is configured to receive from the electronic device reward vehicle information corresponding to a reward vehicle by which the consumer is rewarded.

32. A system according to claim 31, wherein the processor is further configured to:  
receive again the incentive vehicle identifier in response to a purchase transaction of the consumer;  
determine whether the consumer qualifies to receive a reward; and  
reward the consumer if the consumer qualifies to receive the reward, using the reward vehicle information.

33. A system according to claim 20, wherein the processor is further configured to:  
receive additional preferred merchant information corresponding to additional preferred merchants of the consumer; and  
associate the additional preferred merchant information with the consumer identifier.

34. A system comprising:  
a memory having embodied therein consumer identifier information, preferred merchant information, and promotions vehicle information, the consumer identifier information being associated with the preferred merchant information and the promotions vehicle information and corresponding to a consumer identifier of a consumer, the preferred merchant information corresponding to a preferred merchant of the consumer, the promotions vehicle information corresponding to a promotions vehicle identifier of a promotions vehicle selected by the consumer to receive promotions; and  
a processor in communication with the memory, the processor configured to deliver to the promotions vehicle a promotion corresponding to the preferred merchant, using the promotions vehicle identifier.

35. A system according to claim 34, wherein the memory has embodied therein product category information of a product category associated with the preferred merchant, wherein the promotion corresponds to the product category.

36. A system according to claim 34, wherein the memory has embodied therein device identifier information of a device identifier corresponding to another electronic device associated with the preferred merchant and the consumer identifier.

37. A system according to claim 34, wherein the processor is further configured to deliver information of the promotion to the preferred merchant, the information of the promotion including the consumer identifier.

38. A system according to claim 34, wherein the preferred device is one of a personal data assistant, a mobile telephone, and a pager.

39. A system according to claim 34, wherein the memory has embodied therein incentive vehicle information corresponding to an incentive vehicle identifier associated with the preferred merchant, the incentive vehicle identifier corresponding to an incentive vehicle for redeeming promotions delivered to the promotions vehicle.

40. A system according to claim 39, wherein the memory has embodied therein reward vehicle information associated with the consumer identifier and corresponding to a reward vehicle selected by the consumer to receive rewards.

41. A system according to claim 40, wherein the processor is further configured to:  
receive the incentive vehicle identifier in response to a purchase transaction of the consumer;  
determine whether the consumer qualifies to receive a reward; and  
reward the consumer if the consumer qualifies to receive the reward, using the reward vehicle information.

42. A system comprising:  
means for receiving from an electronic device a consumer identifier, preferred merchant information, and promotions vehicle information, the consumer identifier corresponding to a consumer, the preferred merchant information corresponding to a

preferred merchant of the consumer, the promotions vehicle information corresponding to a preferred device of the consumer for receiving promotions; and

means for associating the consumer identifier with the preferred merchant information and the promotions vehicle information.

43. A system according to claim 42, further comprising:

means for sending to the electronic device a merchant registration prompt for the consumer to identify the preferred merchant of the consumer; and

means for sending to the electronic device a promotions vehicle prompt for the consumer to select the preferred device of the consumer for receiving promotions.

44. A system according to claim 42, wherein the consumer identifier is selected from the group consisting of: a consumer identifier, loyalty card number, cookie, IP address, telephone number, and an e-mail address.

45. A system according to claim 42, further comprising means for associating the preferred merchant information and the consumer identifier with a device identifier corresponding to the electronic device.

46. A system according to claim 45, further comprising means for delivering to the electronic device a promotion corresponding to the preferred merchant, using the device identifier, the promotions vehicle information comprising the device identifier and the preferred device comprising the electronic device.

47. A system according to claim 42, further comprising means for delivering information of a promotion to a remote computer associated with the preferred merchant, the information of the promotion including the consumer identifier.

48. A system according to claim 42, wherein the promotions vehicle information includes a promotions vehicle identifier identifying a promotions vehicle comprising the preferred device, and

the system further comprises means for delivering a promotion to the promotions vehicle.

49. A system according to claim 48, wherein the promotions vehicle is one of a personal data assistant, a mobile telephone, and a pager.

50. A system according to claim 48, wherein the preferred device comprises the electronic device.

51. A system according to claim 48, wherein the preferred device comprises another electronic device.

52. A system according to claim 42, further comprising means for receiving from the electronic device an incentive vehicle identifier corresponding to an incentive vehicle for redeeming promotions delivered to the promotions vehicle.

53. A system according to claim 52, further comprising means for receiving from the electronic device reward vehicle information corresponding to a reward vehicle by which the consumer is rewarded.

54. A system according to claim 53, further comprising:  
means for receiving again the incentive vehicle identifier in response to a purchase transaction of the consumer;  
means for determining whether the consumer qualifies to receive a reward; and  
means for rewarding the consumer if the consumer qualifies to receive the reward, using the reward vehicle information.

55. A system according to claim 42, further comprising:  
means for receiving additional preferred merchant information corresponding to additional preferred merchants of the consumer; and

means for associating the additional preferred merchant information with the consumer identifier.

56. A system comprising:

means for storing in association a consumer identifier, preferred merchant information, and a promotions vehicle identifier, the consumer identifier corresponding to a consumer, the preferred merchant information corresponding to a preferred merchant of the consumer, the promotions vehicle identifier identifying a promotions vehicle comprising a preferred device of the consumer for receiving promotions;

means for generating an incentive based on the preferred merchant of the consumer;  
and

means for delivering to the promotions vehicle a promotion corresponding to the preferred merchant, using the promotions vehicle identifier.

57. A system according to claim 56, further comprising means for storing the preferred merchant information in association with a product category, wherein the promotion corresponds to the product category.

58. A system according to claim 56, further comprising means for storing a device identifier corresponding to another electronic device in association with the preferred merchant information and the consumer identifier.

59. A system according to claim 56, further comprising means for delivering information of the promotion to the preferred merchant, the information of the promotion including the consumer identifier.

60. A system according to claim 56, wherein the preferred device is one of a personal data assistant, a mobile telephone, and a pager.

61. A system according to claim 56, further comprising means for storing an incentive vehicle identifier in association with the preferred merchant information, the



incentive vehicle identifier corresponding to an incentive vehicle for redeeming promotions delivered to the promotions vehicle.

62. A system according to claim 61, further comprising means for storing reward vehicle information corresponding to a reward vehicle by which the consumer is rewarded.

63. A system according to claim 62, further comprising:  
means for receiving the incentive vehicle identifier in response to a purchase transaction of the consumer;  
means for determining whether the consumer qualifies to receive a reward; and  
means for rewarding the consumer if the consumer qualifies to receive the reward, using the reward vehicle information.

1/16

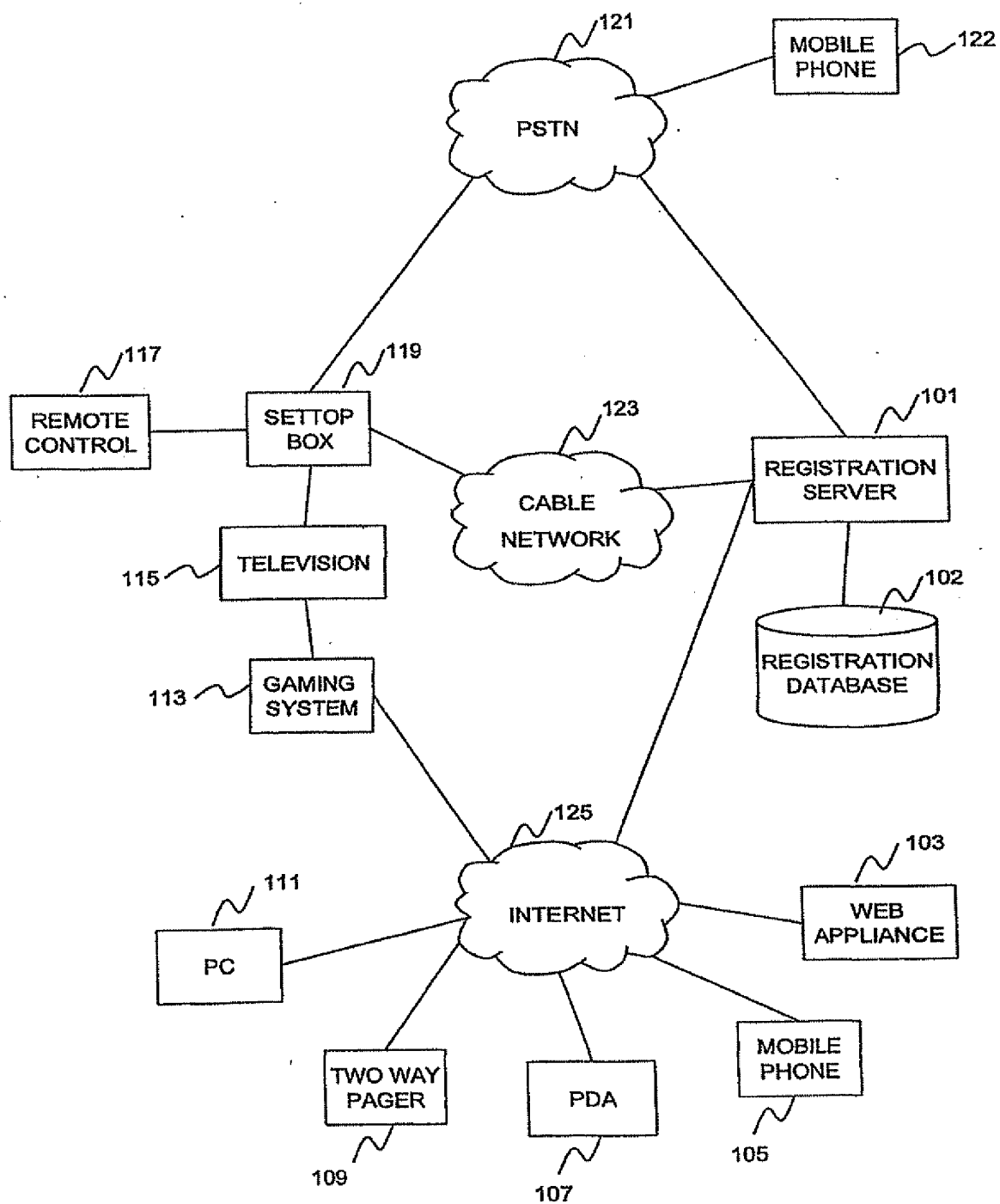


FIG. 1

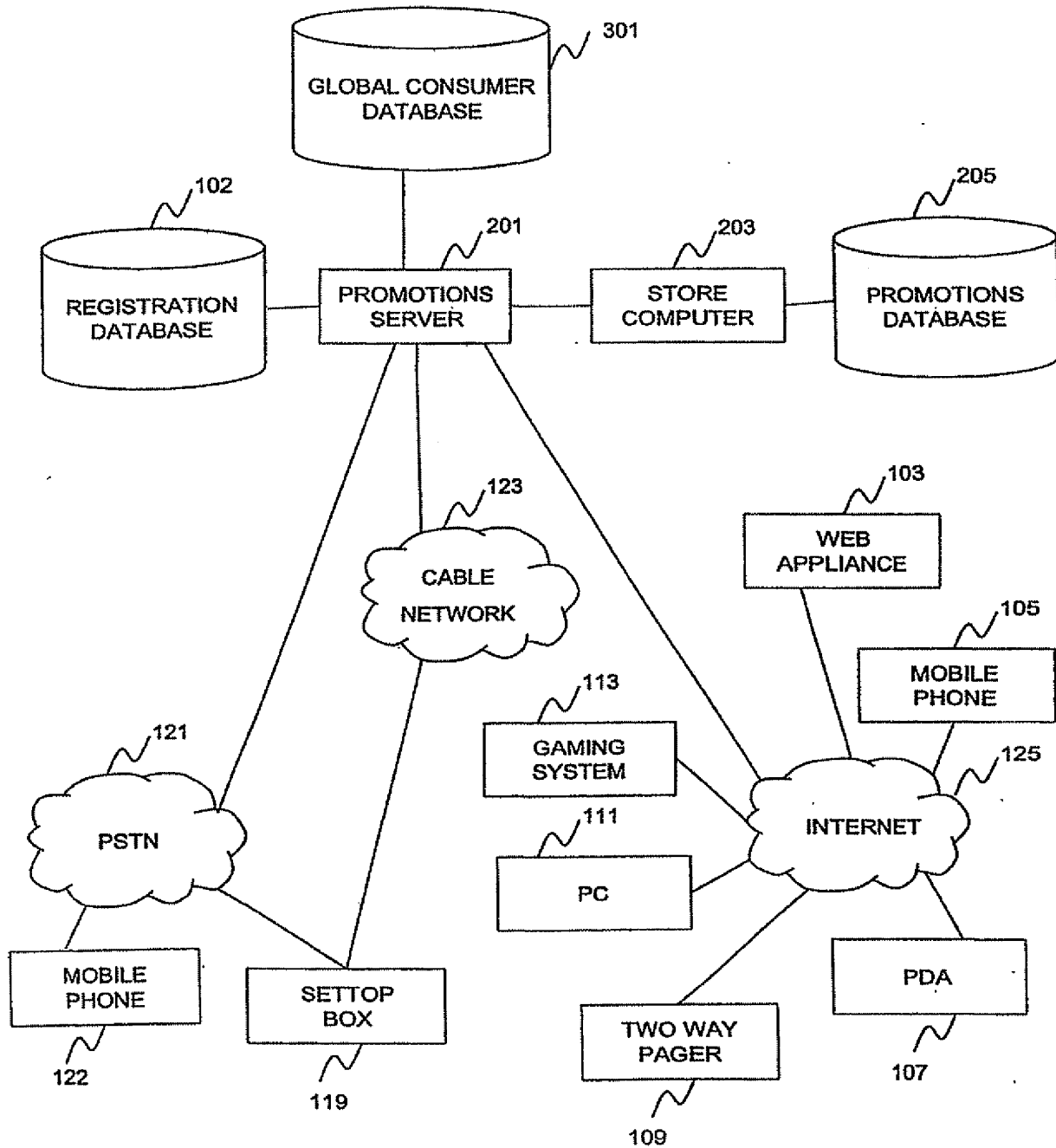


FIG. 2

3/16

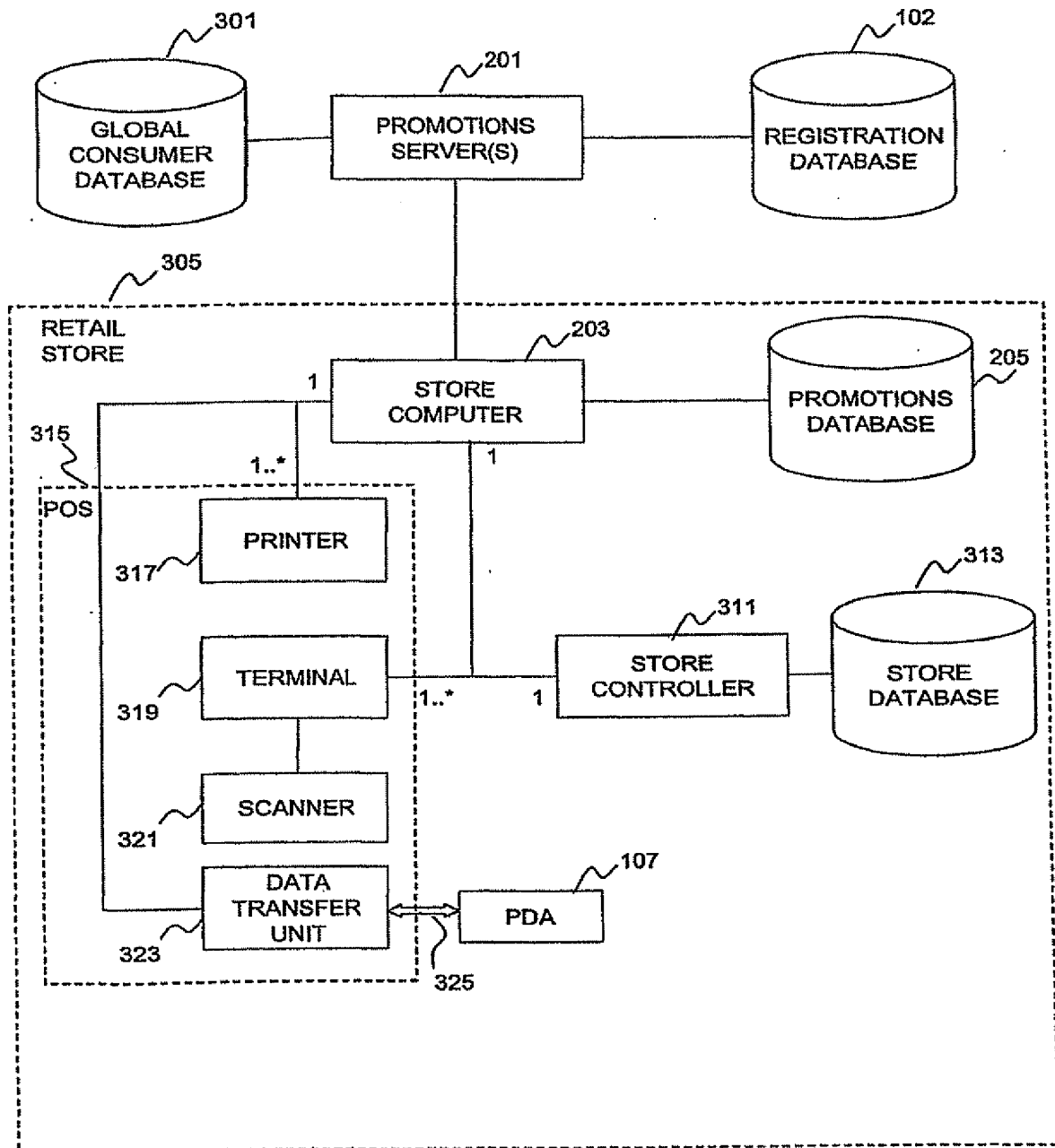


FIG. 3

CONSUMER IDENTIFIER (CID)	DEVICE	DEVICE ID	DEFAULT PROMOTIONS VEHICLE
1234	MOBILE PHONE 1	804-787-7190	YES
1234	PERSONAL COMPUTER 1	123 . 1 . 2 . 3	NO
5678	MOBILE PHONE 1	804-787-7400	NO
5678	PAGER 1	804-787-1487	NO
5678	PDA 1	JDOE@JDOE.COM	YES
5678	MOBILE PHONE 2	804-787-1006	NO

FIG. 4A

5/16

409 →

411

413

415

CID	PRODUCT CATEGORY	PREFERRED RETAILER
1234	GROCERIES #1	SAFEWAY
1234	GROCERIES #2	SUPERFRESH
1234	GROCERIES #3	GIANT
1234	BOOKS/MAGAZINES #1	BARNES & NOBLE
1234	BOOKS/MAGAZINES #2	AMAZON.COM
1234	DELI/MEATS #1	SAFEWAY
1234	DELI/MEATS #2	RALPH'S
1234	DELI/MEATS #3	SMITH'S
1234	DELI/MEATS #4	WEBVAN
1234	MUSIC #1	TOWER RECORDS
1234	MUSIC #2	CDNOW.COM

FIG. 4B

6/16

CID	RETAILER	PROMOTIONS VEHICLE	INCENTIVE VEHICLE	INCENTIVE VEHICLE ID	REWARD VEHICLE	REWARD VEHICLE ID
1234	SAFEWAY	MOBILE PHONE 1	LOYALTY CARD	AABBCC	VISA	4321 4321 4321 4321
1234	SUPERFRESH	MOBILE PHONE 1	LOYALTY CARD	DDEEFF	VISA	4321 4321 4321 4321
1234	GIANT	MOBILE PHONE 1	LOYALTY CARD	GGHHII	VISA	4321 4321 4321 4321
1234	BARNES & NOBLE	PERSONAL COMPUTER 1	WEB PAGE	1234	VISA	4321 4321 4321 4321
1234	AMAZON.COM	PERSONAL COMPUTER 1	WEB PAGE	1234	VISA	4321 4321 4321 4321
1234	RALPH'S	PERSONAL COMPUTER 1	WEB PAGE	1234	VISA	4321 4321 4321 4321
1234	SMITH'S	PERSONAL COMPUTER 1	WEB PAGE	1234	VISA	4321 4321 4321 4321

FIG. 4C

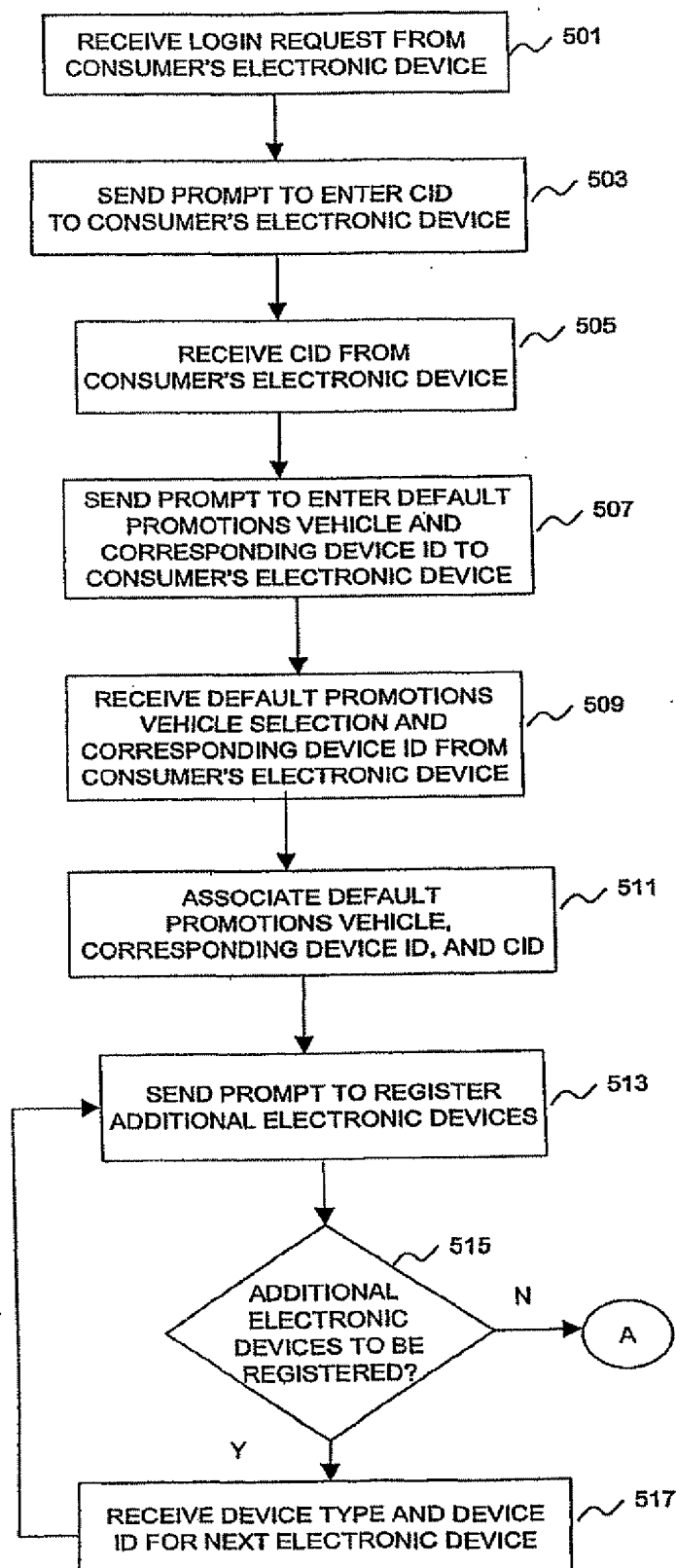
CID	PROMOTION ID	REWARD TRIGGER
1234	FGH	09876
1234	IJK	87654
5678	LMN	65432
5678	OPQ	OPQ
5678	RST	43210

FIG. 4D

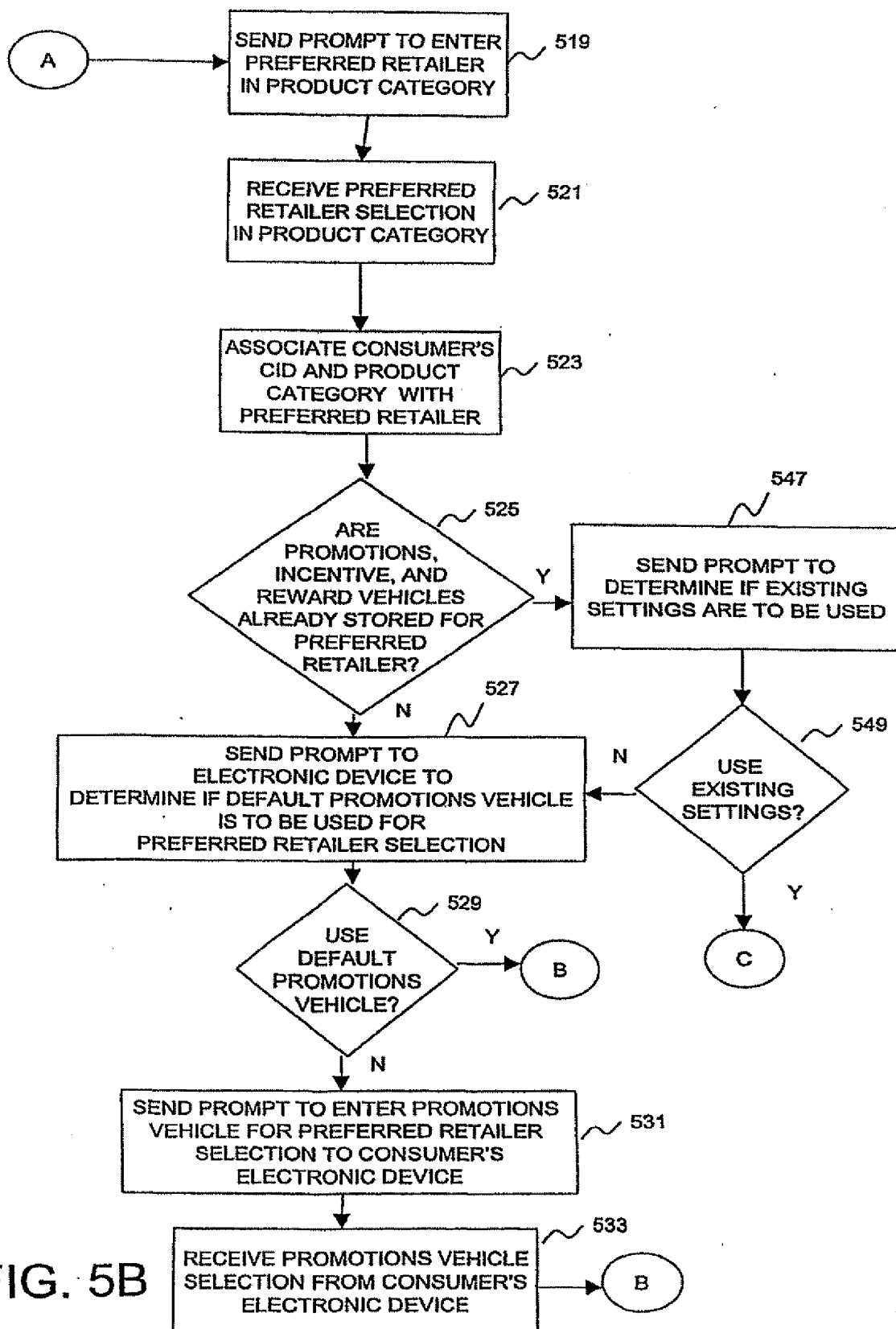


8/16

FIG. 5A



9/16



10/16

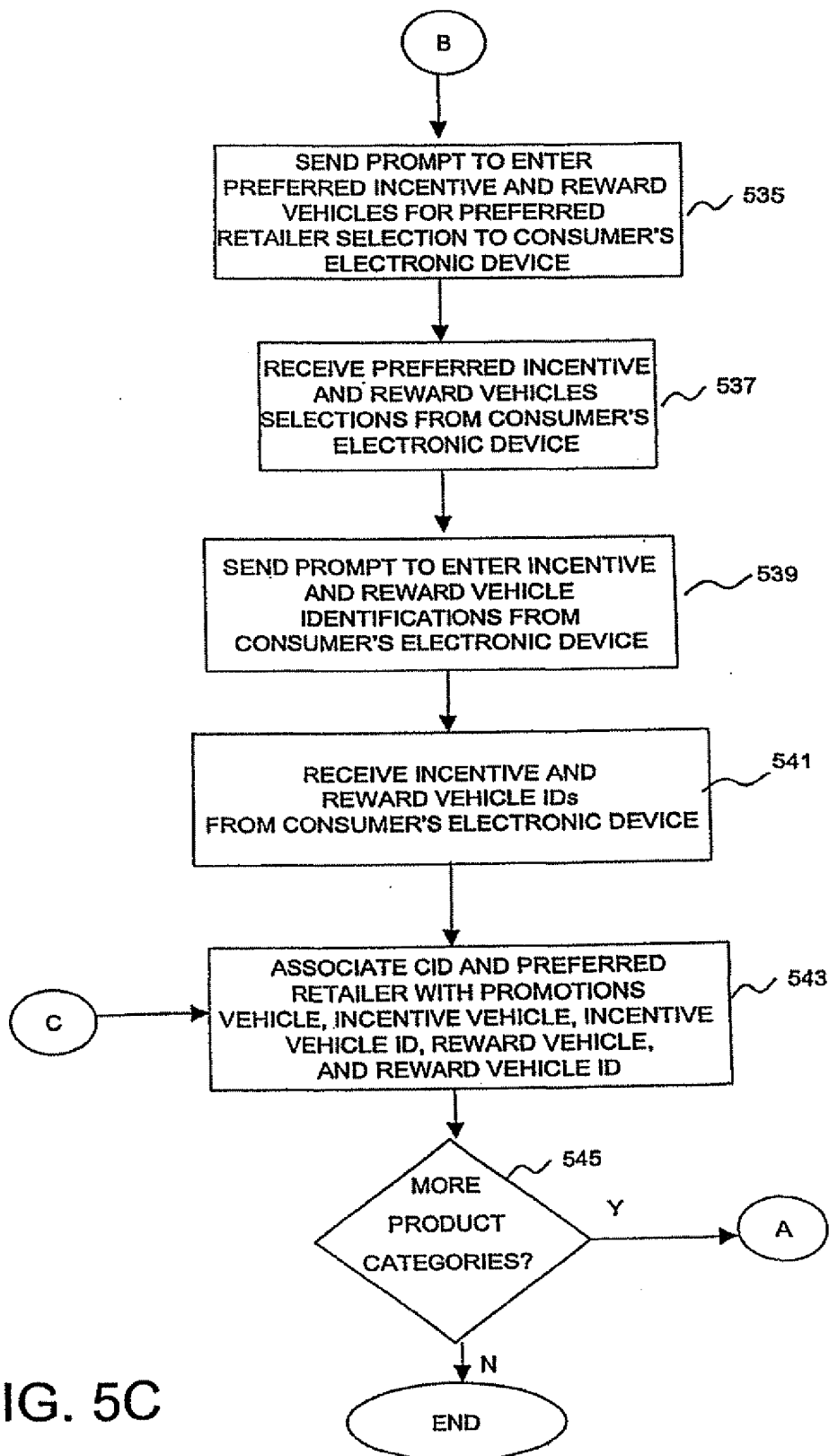


FIG. 5C

11/16

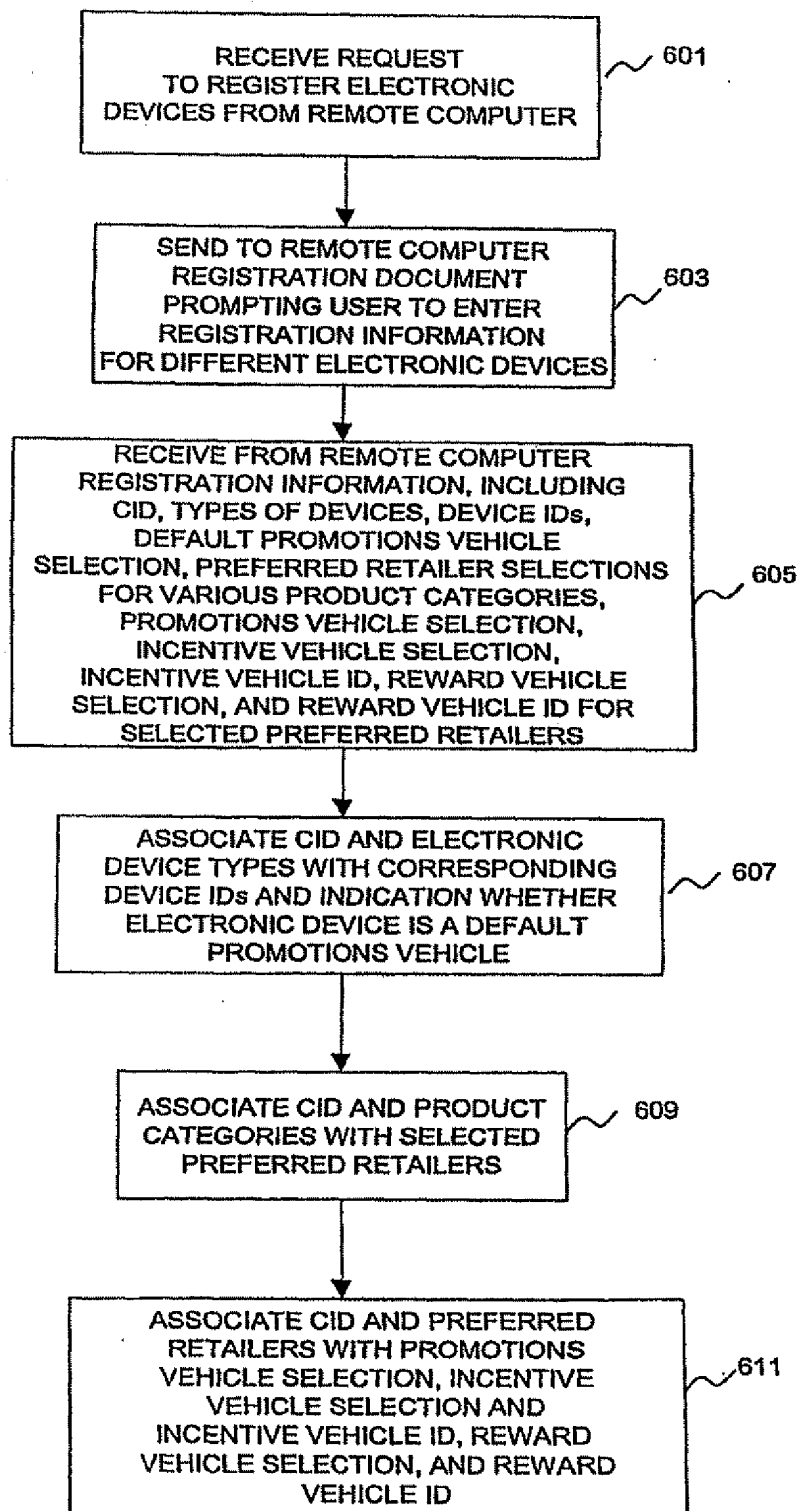


FIG. 6

12/16

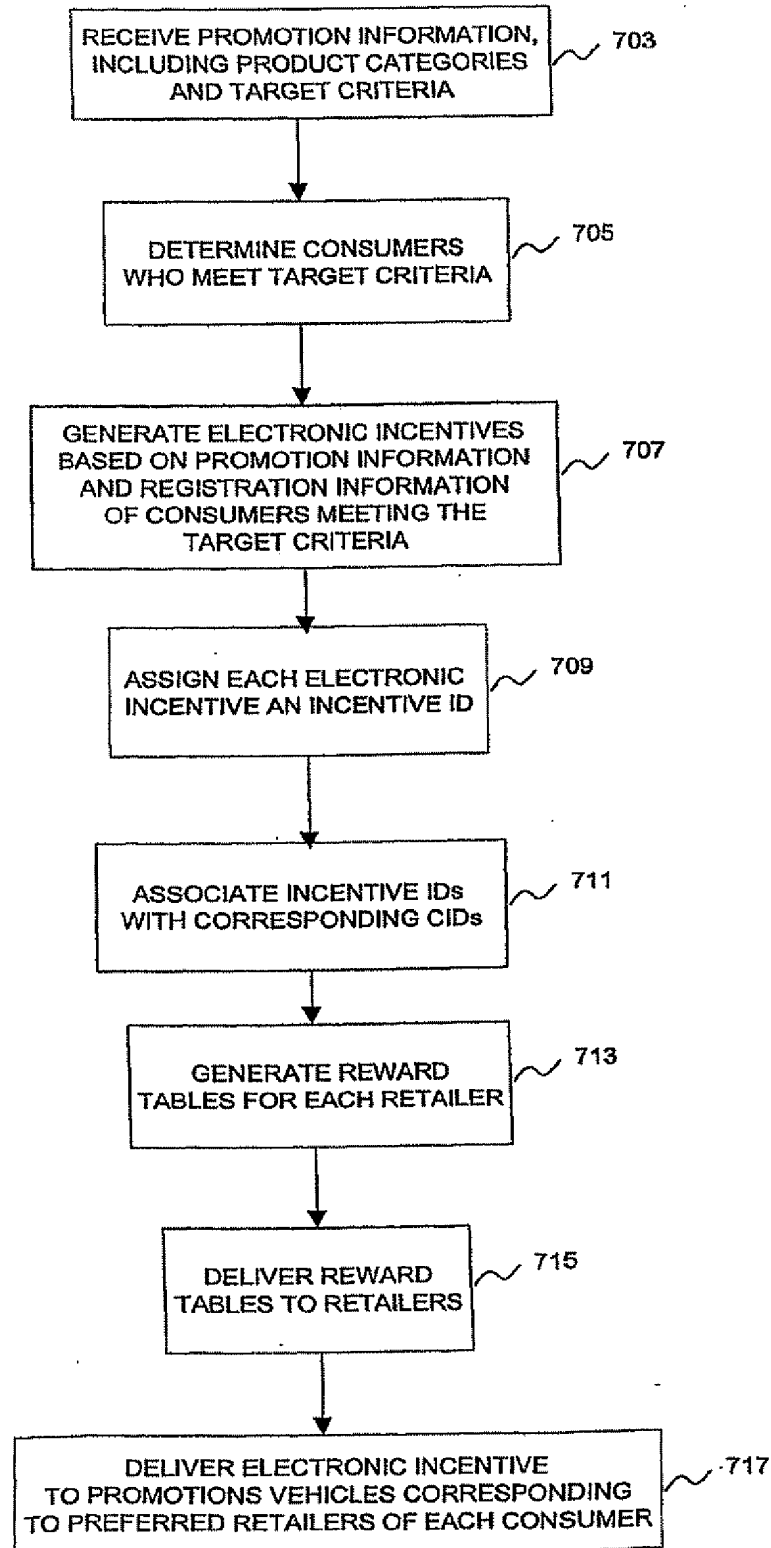


FIG. 7

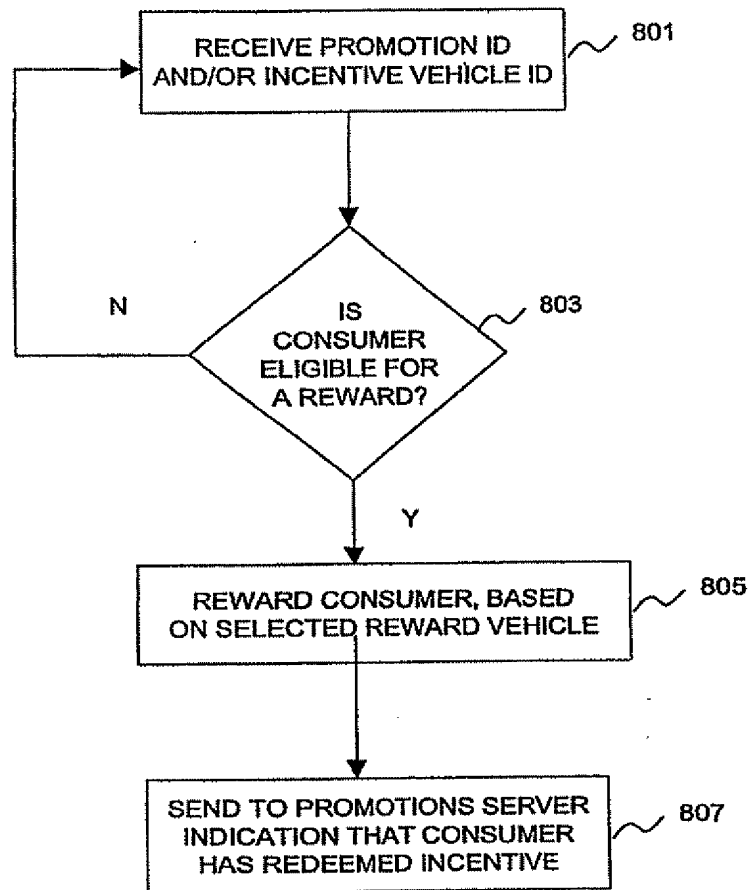


FIG. 8A

14/16

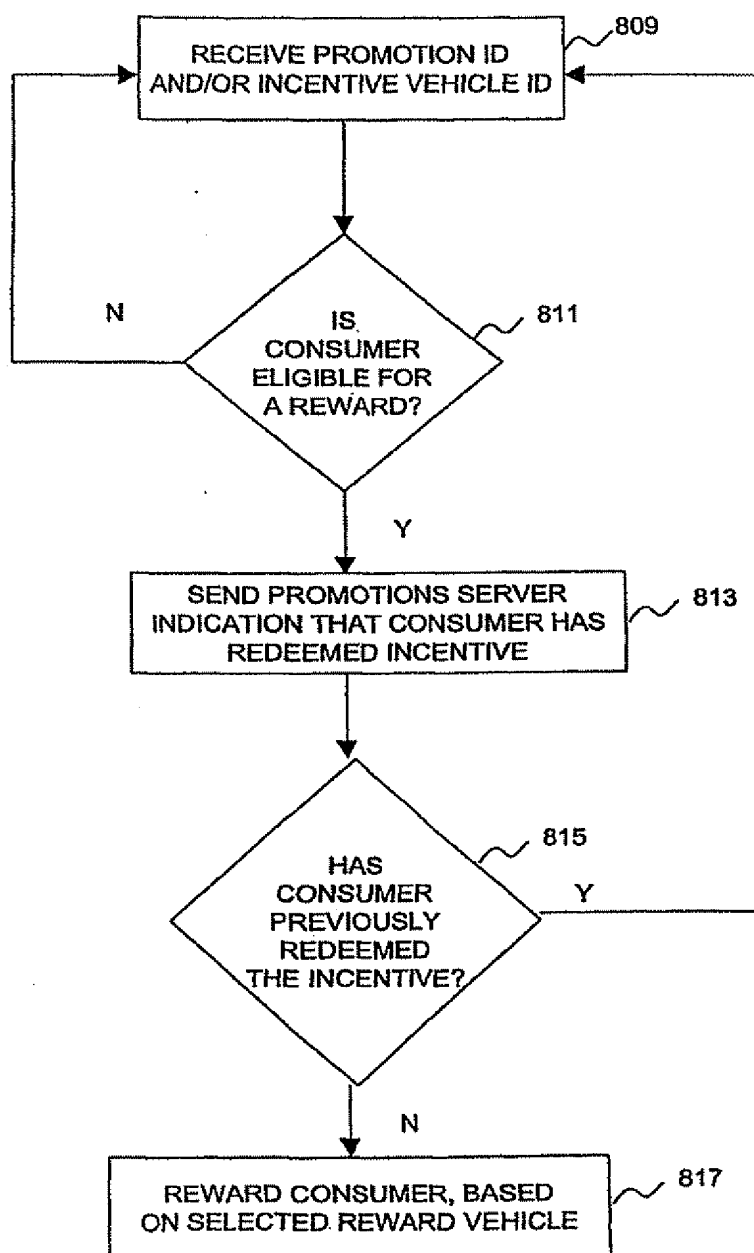


FIG. 8B

15/16

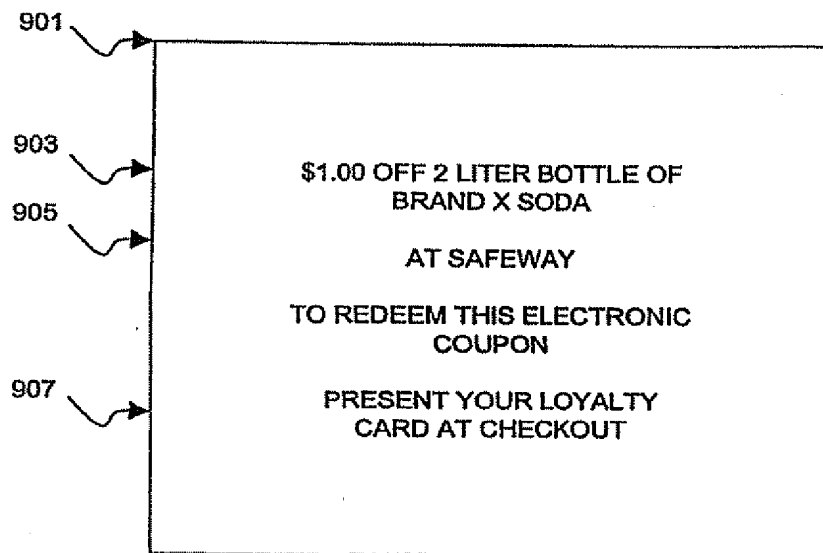


FIG. 9A

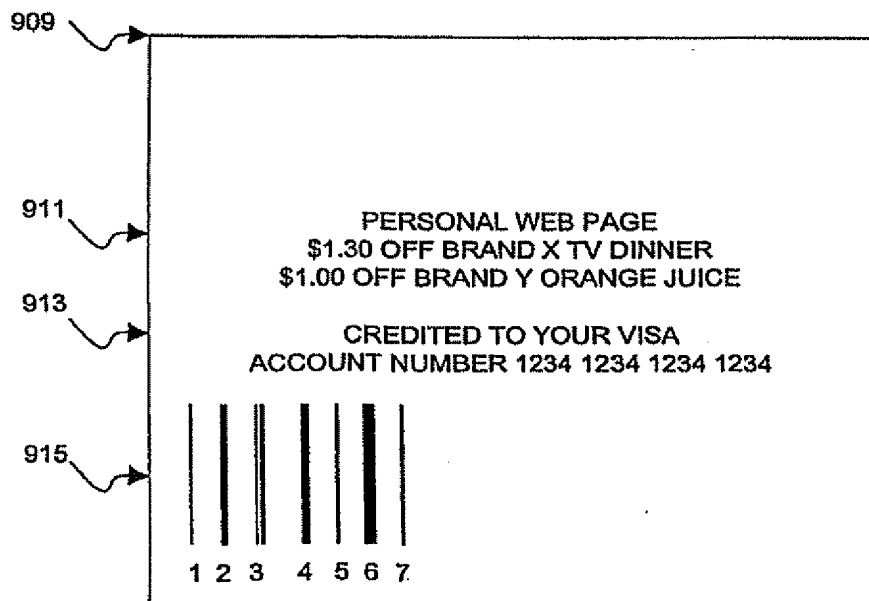


FIG. 9B



16/16

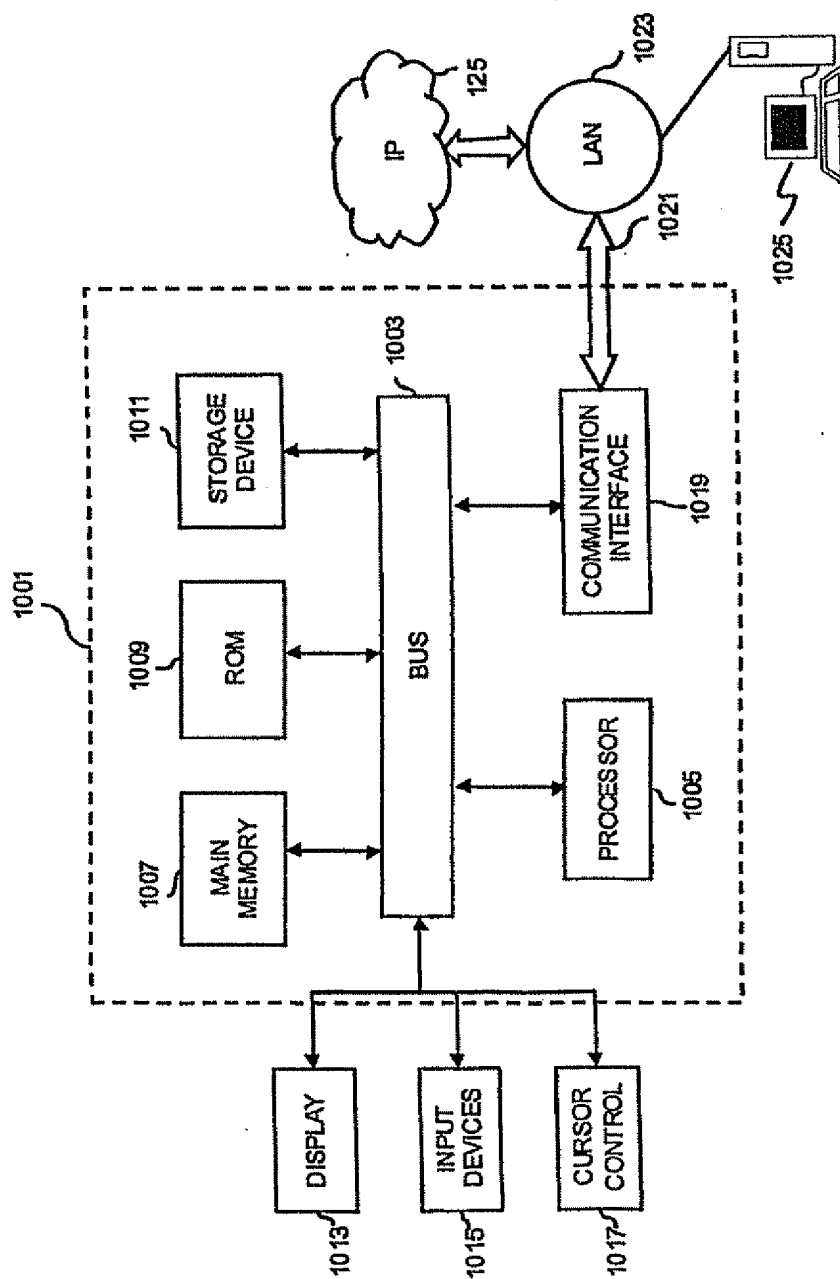


FIG. 10